SAF-RC-048 100 Area and 300 Area Component of the **RCBRA Water Sampling** FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Jill Thomson

H0-23

NB 5/22/06 INITIAL/DATE

Jeanette Duncan

H9-02

NB 5/22/06 INITIAL/DATE

COMMENTS:

SDG K0263 SAF-RC-048

Rad only

Chem only X Rad & Chem

. .

X Complete

Partial

Waste Site: 199-N-26





May 11, 2006

Ms. Joan Kessner Washington Closure Hanford 3190 George Washington Way MSIN H9-02 Richland, WA 99352

Reference:

P.O. #630

Eberline Services R6-03-125-7403, SDG K0263

Dear Ms. Kessner:

Enclosed is the data report for one water sample designated under SAF No. RC-048. The sample was received at Eberline Services on March 22, 2006. The sample was analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion

Senior Program Manager

Melissa Mann

MCM/njv

Enclosure: Data Package

Analytical Services 2030 Wright Avenue P.O. Box 4040 Richmond, California 94804-0040 (510) 235-2633 Fax (510) 235-0438 Toll Free (800) 841-5487 www.eberlineservices.com

Case Narrative

Page 1 of 1

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K0263 was composed of one water sample designated under SAF No. RC-048 with a Project Designation of: 100 Area and 300 Area Component of the RCBRA Water Sa.

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. All results were transmitted to WCH via e-mail on May 9, 2006.

2.0 ANALYSIS NOTES

2.1 Tritium Analysis

No problems were encountered during the course of the analyses.

2.2 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.3 Radium-226 Analysis

No problems were encountered during the course of the analyses.

2.4 Radium-228 Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.6 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.7 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Melissa C. Mannion Date

Senior Program Manager

EBERLINE SERVICES / RICHMOND SAMPLE DELIVERY GROUP K0263

SDG 7403 Contact Melissa C. Mannion Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG_K0263</u>

SUMMARY DATA SECTION

TABLE OF	C O	N T	E N	тѕ	
About this section	•	•	•		1
Sample Summaries	-	•	•	•	3
Prep Batch Summary	•	•	•	•	5
Work Summary	•	•	•	•	6
Method Blanks	•	•	•	•	8
Lab Control Samples	•	•	•	•	10
Duplicates	•	•	•	•	11
Matrix Spikes	•	•	•	•	13
Data Sheets	•	•	•	•	14
Method Summaries	•	•	•	•	15
Report Guides			•	•	22
End of Section	•	٠		•	36

<u> </u>	Verville
Prepared	
muss	Mamm
Reviewed	by

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 05/09/06

SAMPLE DELIVERY GROUP K0263

SDG 7403

Contact Melissa C. Mannion

REPORT GUIDE

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG K0263</u>

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

REPORT GUIDES
Page 1
SUMMARY DATA SECTION
Page 1

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/09/06

SAMPLE DELIVERY GROUP K0263

SDG 7403 Contact Melissa C. Mannion

GUIDE, cont.

Client	Hani	ford	
Contract	No.	630	
Case no	SDG	K0263	

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

REPORT GUIDES
Page 2
SUMMARY DATA SECTION
Page 2

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/09/06

SAMPLE DELIVERY GROUP K0263

SDG 7403 Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client	Hanford
Contract	No. 630
Case no	SDG K0263

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX L	EVEL SAF NO	CHAIN OF CUSTODY	COLLECTED
R603125-01	J11J28	199-N-26	WATER	RC-048	RC-048-367	03/20/06 11:02
R603125-02	Lab Control Sample		WATER	RC-048		
R603125-03	Method Blank		WATER	RC-048		
R603125-04	Duplicate (R603125-01)	199-N-26	WATER	RC-048		03/20/06 11:02
R603125-05	Spike (R603125-01)	199-N-26	WATER	RC-048		03/20/06 11:02

LAB SUMMARY

Page 1

SUMMARY DATA SECTION

Page 3

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS

Version 3.06

Report date <u>05/09/06</u>

SAMPLE DELIVERY GROUP K0263

SDG 7403
Contact Melissa C. Mannion

QC SUMMARY

Client <u>Hanford</u>

Contract <u>No. 630</u>

Case no <u>SDG K0263</u>

ос ватсн	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX SOI	SAMPLE AMOUNT	BASIS AMOUNT	DAYS S		LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7403	RC-048-367	J11J28	WATER	5 Ъ		03/22/06	2	R603125-01	7403-001
		Method Blank	WATER					R603125-03	7403-003
		Lab Control Sample	WATER					R603125-02	7403-002
		Duplicate (R603125-01)	WATER	5 L		03/22/06	2	R603125-04	7403-004
		Spike (R603125-01)	WATER	5 L		03/22/06	2	R603125-05	7403-005

QC SUMMARY
Page 1
SUMMARY DATA SECTION
Page 4

SAMPLE DELIVERY GROUP K0263

SDG 7403
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford

Contract No. 630

Case no SDG K0263

			PREPARATIO	PREPARATION ERROR			PLANCHETS ANALYZED				
TEST	MATRIX	METHOD	ватсн	20 %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG MS/ORIG	FIERS
Alpha	Spectros	сору									
TH	WATER	Thorium, Isotopic in Water	7131-119	5.0	1			1	1	1/1	
ט	WATER	Uranium, Isotopic in Water	7131-119	5.0	1			1	1	1/1	
Beta	Counting										
AC	WATER	Radium 228 in Water	7131-119	5.0	1			1	1	1/1	
SR	WATER	Total Strontium in Water	7131-119	10.0	1			1	1	1/1	
Gamma	Scan					- ,					
GAM	WATER	Gamma Emitters	7131-119	15.0	1			1	1	1/1	
Liqui	d Scintil	lation Counting									
н	WATER	Tritium in Water	7131-119	10.0	1			1	1	1/1 1/1	x
Radon	Counting										
RA .	WATER	Radium 226 in Water	7131-119	5.0	1			1	1	1/1	

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.

Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

PREP BATCH SUMMARY
Page 1
SUMMARY DATA SECTION
Page 5

Lab id EBRLNE
Protocol Hanford

Version Ver 1.0

Form DVD-PBS

Version 3.06

Report date 05/09/06

SAMPLE DELIVERY GROUP K0263

SDG	7403		
Contact	Melissa	C.	Mannion

LAB WORK SUMMARY

Client Hanford

Contract No. 630

Case no SDG K0263

LAB SAMPLE	CLIENT SAMPLE	ID								
COLLECTED	LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-	ANALYZED	REVIEWED	ву	METHOD
RECEIVED	COSTODI	SAF NO		PIANCESI	1631	LIX	AWALIZED	KEVIEWED	D1	METHOD
R603125-01	J11J28			7403-001	AC		04/19/06	04/26/06	MWT	Radium 228 in Water
03/20/06	199-N-26		WATER	7403-001	GAM		05/06/06	05/08/06	CSS	Gamma Emitters
03/22/06	RC-048-367	RC-048		7403-001	н		04/26/06	05/03/06	MWT	Tritium in Water
				7403-001	RA.		04/18/06	04/25/06	MWT	Radium 226 in Water
				7403-001	SR		04/13/06	04/17/06	MWT	Total Strontium in Water
				7403-001	TH		04/24/06	05/01/06	MWT	Thorium, Isotopic in Water
				7403-001	Ū		04/15/06	04/17/06	MWT	Uranium, Isotopic in Water
R603125-02	Lab Control S	ample		7403-002	AC		04/19/06	04/26/06	MWT	Radium 228 in Water
			WATER	7403-002	GAM		05/07/06	05/08/06	CSS	Gamma Emitters
		RC-048		7403-002	н		04/26/06	05/03/06	MWT	Tritium in Water
				7403-002	RA		04/18/06	04/25/06	MWT	Radium 226 in Water
				7403-002	SR		04/13/06	04/17/06	MWT	Total Strontium in Water
				7403-002	TH		04/24/06	05/01/06	MWT	Thorium, Isotopic in Water
				7403-002	Ü		04/15/06	04/17/06	MWT	Uranium, Isotopic in Water
R603125-03	Method Blank	•		7403-003	AC		04/19/06	04/26/06	MWT	Radium 228 in Water
			WATER	7403-003	GAM		05/07/06	05/08/06	CSS	Gamma Emitters
		RC-048		7403-003	н		04/26/06	05/03/06	MWT	Tritium in Water
				7403-003	RA		04/18/06	04/25/06	MWT	Radium 226 in Water
				7403-003	SR		04/13/06	04/17/06	MWT	Total Strontium in Water
				7403-003	TH		04/24/06	05/01/06	MWT	Thorium, Isotopic in Water
				7403-003	υ		04/15/06	04/17/06	MWT	Uranium, Isotopic in Water
R603125-04	Duplicate (R6	03125-01)		7403-004	AC		04/19/06	04/26/06	MWT	Radium 228 in Water
03/20/06	199-N-26		WATER	7403-004	GAM		05/07/06	05/08/06	CSS	Gamma Emitters
03/22/06		RC-048		7403-004	H		04/26/06	05/03/06	MWT	Tritium in Water
				7403-004	RA		04/18/06	04/25/06	MWT	Radium 226 in Water
				7403-004	SR		04/13/06	04/17/06	MWT	Total Strontium in Water
				7403-004	TH		04/24/06	05/01/06	MWT	Thorium, Isotopic in Water
				7403-004	Ū		04/15/06	04/17/06	MWT	Uranium, Isotopic in Water
R603125-05	Spike (R60312	5-01)		7403-005	н		04/27/06	05/03/06	MWT	Tritium in Water
03/20/06	199-N-26		WATER							
03/22/06		RC-048								

WORK SUMMARY
Page 1
SUMMARY DATA SECTION
Page 6

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LWS

Version 3.06

Report date 05/09/06

SAMPLE DELIVERY GROUP K0263

SDG	7403		
Contact	Melissa	C.	Mannion

WORK SUMMARY, cont.

Client	Hanford
Contract	No. 630
Case no	SDG K0263

TEST	SAF No	COUNTS O	F TESTS BY SAM	IPLE TYPE CLIENT MORE RE	E BLANK	LCS	DUP SPIKE	TOTAL
AC	RC-048	Radium 228 in Water	RAISO_SEP_GPC	1	1	1	1	4
GAM	RC-048	Gamma Emitters	GAMMA_GS	1	1	1	1	4
н	RC-048	Tritium in Water	906.0_H3_LSC	1	1	1	1 1	5
RA	RC-048	Radium 226 in Water	903.1_RA226_LUC	1	1	1	1	4
SR	RC-048	Total Strontium in Water	SRTOT_SEP_PRECIP_GPC	1	1	1	1	4
TH	RC-048	Thorium, Isotopic in Water	THISO_IE_PLATE_AEA	1	1	1	1	4
υ	RC-048	Uranium, Isotopic in Water	UISO_PLATE_AEA	1	1	1	1	4
TOTALS				7	7	7	7 1	29

WORK SUMMARY
Page 2
SUMMARY DATA SECTION
Page 7

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 05/09/06

EBERLINE SERVICES/RICHMOND SAMPLE DELIVERY GROUP K0263

7403-003

METHOD BLANK

Method Blank

	7403 Melissa C. Mannion	Client/Case no Contract	SDG_K0263
Lab sample id Dept sample id		Client sample id Material/Matrix SAF No	WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	-624	1000	1700	400	บ	н
Total Strontium	SR-RAD	-0.056	0.29	0.62	2.0	U	SR
Radium 228	15262-20-1	0.184	0.72	1.5	3.0	U	AC
Thorium 228	14274-82-9	0	0.096	0.37		U	TH
Thorium 230	14269-63-7	0.143	0.19	0.37	1.0	U	TH
Thorium 232	TH-232	0.048	0.096	0.37	1.0	U	TH
Uranium 233/234	U-233/234	0	0.091	0.35	1.0	U	U
Uranium 235	15117-96-1	0	0.11	0.42	1.0	U	Ū
Uranium 238	U-238	0	0.091	0.35	1.0	U	U
Radium-226	13982-63-3	0.460	0.40	0.62	2.0	U	RA
Potassium 40	13966-00-2	U		58		U	GAM
Cobalt 60	10198-40-0	U		5.6	25	U	GAM
Cesium 137	10045-97-3	U		5.2	15	U	GAM
Radium 226	13982-63-3	U		9.0		U	GAM
Radium 228	15262-20-1	U		21		U	GAM
Europium 152	14683-23-9	U		12	50	U	GAM
Europium 154	15585-10-1	U		16	50	U	GAM
Europium 155	14391-16-3	U		8.0	50	U	GAM
Thorium 228	14274-82-9	U		7.4		U	GAM
Thorium 232	TH-232	U		21		U	GAM
Uranium 235	15117-96-1	บ		16		U	GAM
Uranium 238	U-238	U		630		U	GAM
Americium 241	14596-10-2	U		6.1		U	GAM
Beryllium 7	13966-02-4	U		32		U	GAM
Ruthenium 106	13967-48-1	U		42		U	GAM
Antimony 125	14234-35-6	U		11		U	GAM
Cesium 134	13967-70-9	ប		6.0		U	GAM

100&300Area Component RCBRA Water Sa

METHOD BLANKS
Page 1
SUMMARY DATA SECTION
Page 8

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 05/09/06

EBERLINE SERVICES / RICHMOND SAMPLE DELIVERY GROUP K0263

7403-003

BLANK, cont.

Method Blank

	7403 Melissa C. Mannion	Client/Case no Contract	 SDG_K0263
Lab sample id Dept sample id		Client sample id Material/Matrix SAF No	WATER

QC-BLANK #56637

METHOD BLANKS
Page 2
SUMMARY DATA SECTION
Page 9

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 05/09/06

SAMPLE DELIVERY GROUP K0263

7403-002

LAB CONTROL SAMPLE

Lab Control Sample

	7403 Melissa C. Mannion	Client/Case no Contract		SDG K0263
Lab sample id	R603125-02	Client sample id	Lab Control Sample	
Dept sample id	7403-002	Material/Matrix		WATER
		SAF No	RC-048	

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ADDED pCi/L	20 ERR pCi/L	REC	3σ LMTS (TOTAL)	PROTOCOI LIMITS
Tritium	21300	1500	1600	400		н	22100	880	96	81-119	80-120
Total Strontium	22.3	1.2	0.51	2.0		SR	21.6	0.86	103	81-119	80-120
Radium 228	16.4	1.1	1.7	3.0		AC	16.4	0.66	100	86-114	80-120
Thorium 230	19.3	3.6	0.43	1.0		TH	20.2	0.81	96	72-128	80-120
Uranium 233/234	19.4	2.0	0.92	1.0		ט	18.6	0.74	104	81-119	80-120
Uranium 235	15.6	1.7	0.22	1.0		υ	15.1	0.60	103	80-120	80-120
Uranium 238	20.3	2.1	0.89	1.0		U	20.2	0.81	100	82-118	80-120
Radium-226	45.7	2.8	0.75	2.0		RA	50.3	2.0	91	88-112	80-120
Cobalt 60	445	20	12	25		GAM	474	19	94	77-123	
Cesium 137	487	18	13	15		GAM	492	20	99	76-124	80-120

100&300Area Component RCBRA Water Sa

QC-LCS #56636		
1		

LAB CONTROL SAMPLES
Page 1
SUMMARY DATA SECTION
Page 10

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06

Report date <u>05/09/06</u>

SAMPLE DELIVERY GROUP K0263

7403-004

DUPLICATE

J11J28

SDG 7403

Contact Melissa C. Mannion

DUPLICATE

Lab sample id <u>R603125-04</u>
Dept sample id <u>7403-004</u>

ORIGINAL

Lab sample id <u>R603125-01</u>
Dept sample id <u>7403-001</u>

Received <u>03/22/06</u>

Client/Case no Hanford SDG K0263

Contract No. 630

Client sample id <u>J11J28</u>

Location/Matrix 199-N-26

WATER

Collected/Volume 03/20/06 11:02 5 L
Custody/SAF No RC-048-367 RC-048

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGI NA L pCi/L	20 ERR (COUNT)	MDA pCi/L	QUALI- FIERS	RPD	3σ тот	DER o
Tritium	142	110	170	400	ט	н	122	100	170	ט	-		0.3
Total Strontium	0.174	0.28	0.54	2.0	σ	SR	0.094	0.31	0.62	U	-		0.4
Radium 228	0.402	0.86	1.6	3.0	Ū	AC	-0.011	0.70	1.7	ט	-		0.7
Thorium 228	0.118	0.12	0.23		U	тн	0	0.10	0.38	U	-		1.5
Thorium 230	-0.029	0.12	0.22	1.0	υ	TH	0.100	0.20	0.38	ט	-		1.1
Thorium 232	0	0.059	0.22	1.0	U	тн	0.100	0.10	0.38	ט	-		1.7
Oranium 233/234	0.382	0.17	0.13	1.0		U	0.448	0.20	0.19		16	95	0.5
Uranium 235	0.040	0.040	0.15	1.0	ซ	ט	0.030	0.060	0.23	U	-		0.3
Uranium 238	0.532	0.20	0.13	1.0		ט	0.548	0.25	0.19		3	90	0.1
Radium-226	-0.324	0.26	0.63	2.0	υ	RA	-0.078	0.28	0.58	ט	-		1.3
Potassium 40	υ		320		U	GAM	ŭ		280	ט	-		0.2
Cobalt 60	ប		13	25	ט	GAM	U		15	U	-		0.2
Cesium 137	υ		13	15	ט	GAM	U		13	U	-		0
Radium 226	υ		26		U	GAM	U		25	υ	-		0.1
Radium 228	υ		56		ט	GAM	U		54	Ü	-		0.1
Europium 152	U		32	50	U	GAM	U		30	ט	-		0.1
Europium 154	υ		35	50	U	GAM	U		36	ט	-		0
Europium 155	σ		40	50	U	GAM	U		32	ט	-		0.3
Thorium 228	Ū		19		U	GAM	U		16	U	-		0.2
Thorium 232	U		56		U	GAM	U		54	U	-		0.1
Uranium 235	Ū		48		U	GAM	ט		40	Ū	-		0.3
Uranium 238	Ū		1400		ט	GAM	υ		1400	ט	-		0
Americium 241	U		96		U	GAM	U		55	U	-		0.7
Beryllium 7	ŭ		160		ט	GAM	Ü		150	Ü	-		0.1
Ruthenium 106	υ		110		U	GAM	ប		93	ū	-		0.2
Antimony 125	υ		28		U	GAM	U		25	ט	-		0.2
Cesium 134	υ		13		U	GAM	ט		16	U	_		0.3

100&300Area Component RCBRA Water Sa

DUPLICATES
Page 1

SUMMARY DATA SECTION

Page 11

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-DUP
Version 3.06

Report date 05/09/06

SAMPLE DELIVERY GROUP K0263

7403-004

DUPLICATE, cont.

J11J28

						
SDG	7403			Client/Case no	Hanford	SDG K0263
Contact	Melissa C. Mannion			Contract	No. 630	<u>-</u>
	DUPLICATE		ORIGINAL			
Lab sample id	R603125-04	Lab sample id	R603125-01	Client sample id	J11J28	
Dept sample id	7403-004	Dept sample id	7403-001	Location/Matrix	199-N-26	WATER
		Received	03/22/06	Collected/Volume	03/20/06 11:02	5 L
				Custody/SAF No	RC-048-367 RC-0	048

38		
----	--	--

DUPLICATES

Page 2

SUMMARY DATA SECTION

Page 12

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DUP

Version 3.06

Report date 05/09/06

SAMPLE DELIVERY GROUP K0263

7403-005

MATRIX SPIKE

J11J28

SDG 7403		Client/Case no	Hanford	SDG K0263
Contact Melissa C. Mannion		Contract	No. 630	
MATRIX SPIKE	ORIGINAL			
Lab sample id <u>R603125-05</u>	Lab sample id <u>R603125-01</u>	Client sample id	J11J28	
Dept sample id 7403-005	Dept sample id 7403-001	Location/Matrix	199-N-26	WATER
	Received <u>03/22/06</u>	Collected/Volume	03/20/06 11:02	5 L
		Custody/SAF No	RC-048-367 RC	C-048

ANALYTE	SPIKE pCi/L	20 ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	ORIGINAL pCi/L	2σ ERR (COUNT)	REC 30 LMTS	PROTOCOL LIMITS
Tritium	24200	520	230	400	х	н	25400	1000	122	100	95 84-116	60-140

100&300Area Component RCBRA Water Sa

QC-MS#1	56639			

MATRIX SPIKES
Page 1
SUMMARY DATA SECTION
Page 13

EBERLINE SERVICES / RICHMOND SAMPLE DELIVERY GROUP K0263

7403-001

DATA SHEET

J11J28

	7403 Melissa C. Mannion	Client/Case no Contract		SDG	K0263
Lab sample id Dept sample id Received		Client sample id Location/Matrix Collected/Volume Custody/SAF No	199-N-26 03/20/06 11:02	5 L	WATER

ANALYTE	CAS NO	RESULT pCi/L	20 ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	122	100	170	400	U	Н
Total Strontium	SR-RAD	0.094	0.31	0.62	2.0	U	SR
Radium 228	15262-20-1	-0.011	0.70	1.7	3.0	Ū	AC
Thorium 228	14274-82-9	0	0.10	0.38		U	TH
Thorium 230	14269-63-7	0.100	0.20	0.38	1.0	U	TH
Thorium 232	TH-232	0.100	0.10	0.38	1.0	U	$\mathbf{T}\mathbf{H}$
Uranium 233/234	U-233/234	0.448	0.20	0.19	1.0		U
Uranium 235	15117-96-1	0.030	0.060	0.23	1.0	ប	U
Uranium 238	U-238	0.548	0.25	0.19	1.0		U
Radium-226	13982-63-3	-0.078	0.28	0.58	2.0	U	RA
Potassium 40	13966-00-2	U		280		U	GAM
Cobalt 60	10198-40-0	U		15	25	υ	GAM
Cesium 137	10045-97-3	U		13	15	υ	GAM
Radium 226	13982-63-3	U		25		υ	GAM
Radium 228	15262-20-1	U		54		U	GAM
Europium 152	14683-23-9	U		30	50	ט ֹ	GAM
Europium 154	15585-10-1	υ		36	50	U	GAM
Europium 155	14391-16-3	U		32	50	ប	GAM
Thorium 228	14274-82-9	U		16		ប	GAM
Thorium 232	TH-232	U		5 4		U	GAM
Uranium 235	15117-96-1	U		40		ប	GAM
Uranium 238	U-238	บ		1400		U	GAM
Americium 241	14596-10-2	U		55		ប	GAM
Beryllium 7	13966-02-4	U		150		υ	GAM
Ruthenium 106	13967-48-1	U		93		บ	GAM
Antimony 125	14234-35-6	U		25		Ū	GAM
Cesium 134	13967-70-9	U		16		U	GAM

100&300Area Component RCBRA Water Sa

DATA SHEETS
Page 1
SUMMARY DATA SECTION
Page 14

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 05/09/06

SAMPLE DELIVERY GROUP K0263

Test TH Matrix WATER
SDG 7403
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN WATER
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K0263

RESULTS

LAB

RAW SUF-

SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Thorium 230 Preparation batch 7131-119 7403-001 J11J28 R603125-01 U R603125-02 7403-002 Lab Control Sample ok 7403-003 Method Blank R603125-03 Ü R603125-04 7403-004 Duplicate (R603125-01)

1.0

Nominal values and limits from method

100&300Area Component RCBRA Water Sa

RDLs (pCi/L)

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT	SAMPLE	ID		XX MC		PREI	P DILU-	¥ YIELD			FWHM keV	_	PREPARED	ANAL- YZED	DETECTOR
Preparation	batc	h 713	1-119	2о р	rep erro	5.0	¥	Reference	Lab	Noteboo	k 7131	pg.	119					-
R603125-01			J11J28				0.38	0.500			36		156		35	04/21/06	04/24	SS-066
R603125-02			Lab Cor	ntrol S	ample		0.43	0.500			30		156			04/21/06	04/24	SS-027
R603125-03			Method	Blank			0.37	0.500			35		156			04/21/06	04/24	SS-029
R603125-04			Duplica	ate (R6	03125-01)		0.22	0.500			59		156		35	04/21/06	04/24	SS-031
Nominal val	ues a	nd li	mits fro	om meth	od		1.0	0.500	•		20-11	D	150	100	180			

١	PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
l		SPP-062	Sample Aliquoting, rev 0
l		CP-900	Thorium in Water and Dissolved Solid Samples by
ł			Extraction Chromatography, rev 1
l		CP-008	Heavy Element Electroplating, rev 9
L			

AVERAGES ± 2 SD MDA __0.35 ± __0.18 FOR 4 SAMPLES YIELD __40 __ ± __26_

METHOD SUMMARIES
Page 1

SUMMARY DATA SECTION

Page 15

SAMPLE DELIVERY GROUP K0263

Test U Matrix WATER

SDG 7403

Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN WATER
ALPHA SPECTROSCOPY

Client	Hani	ford	
Contract	No.	_630	
Contract	SDG	K0263	

RESULTS

LAB	RAW SUF-			1: Uranium	2: Uranium	3: Uranium	RES	ULT R	ATIOS	(₹)
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	233/234	235	238	1+3	20	2+3	2σ
Preparation	n batch 713	1-119			· — · · ·		. 	•		
R603125-01		7403-001	J11J28	0.448	U	0.548	82	52	5	11
R603125-02		7403-002	Lab Control Sample	ok	ok	ok				
R603125-03		7403-003	Method Blank	ט	ט	U				
R603125-04		7403-004	Duplicate (R603125-01)	ok	- U	ok	72	42	8	8
Nominal val	lues and li	mits from m	method RDLs (pCi/L)	1.0	1.0	1.0	100	,	4	
100&300Area	a Component	RCBRA Wate	er Sa				Averages 77	•	6	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX C	LIENT SAME	PLE ID	MAX MD		PREP	DILU-	*		COUNT		 	PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7131-1	119 20	prep error	5.0 %	Reference	Lab	Notebool	k 7131	pg.	119					
R603125-01	J	11J28		0.23	0.500			86		122		26	04/15/06	04/15	SS-032
R603125-02	Li	ab Control	Sample	0.92	0.500			91		122			04/15/06	04/15	SS-033
R603125-03	Me	ethod Bl a r	nk	0.42	0.500			48		122			04/15/06	04/15	SS-034
R603125-04	Dı	uplicate ((R603125-01)	0.15	0.500			88		157		26	04/15/06	04/15	SS-035
Nominal val	ues and limit	ts from me	thod	1.0	0.500			30-10	5	100	100	 180			

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	SPP-062	Sample Aliquoting, rev 0
	CP-040	Environmental Water Dissolution, rev 9
	CP-921	Uranium in Water and Dissolved Samples by
		Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD	MDA _	0.43	±	0.69
FOR 4 SAMPLES	YIELD _	78	±	41

METHOD SUMMARIES

Page 2

SUMMARY DATA SECTION

Page 16

SAMPLE DELIVERY GROUP K0263

LAB METHOD SUMMARY

RADIUM 228 IN WATER BETA COUNTING Client Hanford

Contract No. 630

Contract SDG K0263

RESULTS

LAB RAW SUF-

Radium 228 CLIENT SAMPLE ID SAMPLE ID TEST FIX PLANCHET Preparation batch 7131-119 R603125-01 7403-001 J11J28 U R603125-02 7403-002 Lab Control Sample ok R603125-03 7403-003 Method Blank U 7403-004 Duplicate (R603125-01) R603125-04 U Nominal values and limits from method RDLs (pCi/L) 3.0 100&300Area Component RCBRA Water Sa

METHOD PERFORMANCE

LAB	RAW SUF-	MDA	ALIQ	PREP	DILU-	AIETD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX CLIENT SAMPLE ID	pÇi/L	L	FAC	TION	ŧ	ŧ	min	kęV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation	batch 7131-119 20 prep error	5.0 % R	eference	Lab i	lotebool	k 7131	pg.	119		,				
R603125-01	J11J28	1.7	0.500			68		150			30	04/19/06	04/19	GRB-201
R603125-02	Lab Control Sample	1.7	0.500			56		150				04/19/06	04/19	GRB-202
R603125-03	Method Blank	1.5	0.500			66		150				04/19/06	04/19	GRB-203
R603125-04	Duplicate (R603125-01)	1.6	0.500			68		150			30	04/19/06	04/19	GRB-204
Nominal val	ues and limits from method	3.0	0.500		·			100			180			

PROCEDURES	REFERENCE	raiso_sep_gpc
•	SPP-062	Sample Aliquoting, rev 0
	CP-702	Radium-228 in Water, rev 9

AVERAGES ± 2 SD MDA 1.6 ± 0.19
FOR 4 SAMPLES YIELD 64 ± 11

METHOD SUMMARIES

Page 3

SUMMARY DATA SECTION

Page 17

Lab id <u>BBRLNE</u>

Protocol <u>Hanford</u>

Version <u>Ver 1.0</u>

Form <u>DVD-LMS</u>

Version <u>3.06</u>

Report date <u>05/09/06</u>

SAMPLE DELIVERY GROUP K0263

Test SR Matrix WATER

SDG 7403

Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN WATER
BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG K0263

RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium	
Preparation	batch 713	1-119			
R603125-01		7403-001	J11J28	υ	
R603125-02		7403-002	Lab Control Sample	ok	
R603125-03		7403-003	Method Blank	υ	
R603125-04		7403-004	Duplicate (R603125-01)	- U	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC		# Alerd		COUNT min	 		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7131-119 25 prep error	10.0 % Re	eference	Lab I	Noteboo	k 7131	pg.	119					
R603125-01	J11J28	0.62	0.500			80		100		24	04/13/06	04/13	GRB-232
R603125-02	Lab Control Sample	0.51	0.500			75		100			04/13/06	04/13	GRB-223
R603125-03	Method Blank	0.62	0.500			75		100			04/13/06	04/13	GRB-202
R603125-04	Duplicate (R603125-01)	0.54	0.500			86		100		24	04/13/06	04/13	GRB-203
Nominal val	ues and limits from method	2.0	0.500	-		35-10	5	100		180			

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	SPP-062	Sample Aliquoting, rev 0
	CP-380	Strontium in Water Samples, rev 2

AVERAGES ± 2 SD	MDA _	0.57	±	0.11
FOR 4 SAMPLES	YIELD _	79	±	

METHOD SUMMARIES
Page 4
SUMMARY DATA SECTION
Page 18

SAMPLE DELIVERY GROUP K0263

Test GAM Matrix WATER

SDG 7403

Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA EMITTERS
GAMMA SCAN

Client Hanford
Contract No. 630
Contract SDG K0263

RESULTS

LAB RAW SUF-SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Cobalt 60 Cesium 137 Preparation batch 7131-119 R603125-01 7403-001 J11J28 U U R603125-02 7403-002 LCS (QC ID=56636) οk ok R603125-03 7403-003 BLK (QC ID=56637) U R603125-04 7403-004 Duplicate (R603125-01) - U U Nominal values and limits from method RDLs (pCi/L) 25 15 100&300Area Component RCBRA Water Sa

METHOD PERFORMANCE

LAB	RAW SUF-			MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT	SAMPLE ID	pCi/L	L	FAC	TION	ŧ	ŧ	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation	batch 713	1-119	2σ prep erro	r 15.0 % I	Reference	Lab :	Notebook	7131	pg.	119						
R603125-01		J11J28		57	0.500					308			47	04/04/06	05/06	MDB,08,00
R603125-02		LCS (Q	C ID=56636)	13	0.500					1069				04/04/06	05/07	MB,05,00
R603125-03		BLK (Q	C ID=56637)	_18	0.500					1069				04/04/06	05/07	MB,07,00
R603125-04		Duplica	ate (R603125-01) 74	0.500					1068			48	04/04/06	05/07	01,02,00
		(Q4	ID=56638)													
																
Nominal val	ues and li	mits fr	om method	15	0.500					100			180			

PROCEDURES	REFERENCE	GAMMA_GS
	CP-100	Ge(Li) Preparation for Commercial Samples, rev 7

AVERAGES ± 2 SD MDA 40 ± 60

FOR 4 SAMPLES YIELD ± _____

METHOD SUMMARIES
Page 5
SUMMARY DATA SECTION
Page 19

 Lab id
 EBRLNE

 Protocol
 Hanford

 Version
 Ver 1.0

 Form
 DVD-LMS

 Version
 3.06

 Report date
 05/09/06

SAMPLE DELIVERY GROUP K0263

Test H Matrix WATER SDG 7403 Contact Melissa C. Mannion

LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Client <u>Hanford</u> Contract No. 630 Contract SDG K0263

RESULTS

LAB

RAW SUF-

SAMPLE ID TEST F	IX PLANCHET	CLIENT SAMPLE ID	Trit	ium
Preparation batch	7131-119			
R603125-01	7403-001	J11J28	U	
R603125-02	7403-002	Lab Control Sample	ok	
R603125-03	7403-003	Method Blank	υ	
R603125-04	7403-004	Duplicate (R603125-01)	-	Ū
R603125-05	7403-005	Spike (R603125-01)	ok	х

Nominal values and limits from method 100&300Area Component RCBRA Water Sa

RDLs (pCi/L)

METHOD PERFORMANCE

LAB		SUF-			~ Pa	MDA		PREF				COUNT					ANAL-	
SAMPLE ID	TEST	FIX C	TIENT	SAMPLE :	τn	pCi/	L L	PAC	TION	ł	*	min	keV	KeV	HELL	PREPARED	ASED	DETECTOR
Preparation	batch	7131-	119	2σ pr	ep error	10.0 %	Reference	Lab	Notebook	7131	pg.	119						
R603125-01		J	11J28			170	0.0100			100		120			37	04/26/06	04/26	LSC-004
R603125-02		L	ab Con	trol Sa	mple	1600	0.0100			10		120				04/26/06	04/26	LSC-004
R603125-03		М	ethod	Blank		1700	0.0100			10		120				04/26/06	04/26	LSC-004
R603125-04		D	uplica	te (R60	3125-01}	170	0.0100			100		120			37	04/26/06	04/26	LSC-004
R603125-05		S	pike (R603125	-01)	230	0.0350			28		67			38	04/26/06	04/27	LSC-004
Nominal valu	ies an	d limi	ts fro	m metho	đ	400	0.0100					25			180			

PROCEDURES REFERENCE 906.0_H3_LSC CP-210 Tritium in Water Samples by Distillation, rev 8

MDA <u>770</u> ± <u>1600</u> AVERAGES ± 2 SD FOR 5 SAMPLES YIELD 50 ± 93

METHOD SUMMARIES

Page 6

SUMMARY DATA SECTION

Page 20

Lab id EBRLNE Protocol Hanford Version Ver 1.0 Form DVD-LMS Version 3.06 Report date 05/09/06

SAMPLE DELIVERY GROUP K0263

Test <u>RA</u> Matrix <u>WATER</u> SDG <u>7403</u>

Contact Melissa C. Mannion

LAB METHOD SUMMARY

RADIUM 226 IN WATER RADON COUNTING

Contract No. 630
Contract SDG K0263

RESULTS

LAB RAW SUF-

SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Radium-226 Preparation batch 7131-119 R603125-01 7403-001 J11J28 U R603125-02 7403-002 Lab Control Sample ok 7403-003 Method Blank R603125-03 U R603125-04 7403-004 Duplicate (R603125-01) Nominal values and limits from method RDLs (pCi/L) 2.0

METHOD PERFORMANCE

100&300Area Component RCBRA Water Sa

	raw Suf- Test fix Client sample ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	*	EFF				PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7131-119 2g prep error 5	.0 % F	Reference	Lab l	Notebool	k 7131	pg.	119					
R603125-01	J11J28	0.58	0.100			100		74		29	04/18/06	04/18	RN-011
R603125-02	Lab Control Sample	0.75	0.100			100		55			04/18/06	04/18	RN-016
R603125+03	Method Blank	0.62	0.100			100		74			04/18/06	04/18	RN-013
R603125-04	Duplicate (R603125-01)	0.63	0.100			100		74		29	04/18/06	04/18	RN-015
Nominal valu	es and limits from method	2.0	0.100	.,		20-105	5	70		180			

PROCEDURES REFERENCE 903.1_RA226_LUC

SPP-062 Sample Aliquoting, rev 0

CP-881 Radium-226 in Water and Dissolved Samples, rev 1

AVERAGES ± 2 SD MDA 0.64 ± 0.15
FOR 4 SAMPLES YIELD 100 ± 0

METHOD SUMMARIES

Page 7

SUMMARY DATA SECTION

Page 21

SAMPLE DELIVERY GROUP K0263

SDG 7403 Contact Melissa C. Mannion

REPORT GUIDE

Client	Hani	ford	
Contract	No.	630	
Case no	SDG	K0263	

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- * LAB SAMPLE ID is the lab's primary identification for a sample.
- * DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- * CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- * QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

REPORT GUIDES

Page 1
SUMMARY DATA SECTION

Page 22

Lab id <u>EBRLNE</u>

Protocol <u>Hanford</u>

Version <u>Ver 1.0</u>

Form <u>DVD-RG</u>

Version <u>3.06</u>

Report date <u>05/09/06</u>

SAMPLE DELIVERY GROUP K0263

SDG 7403 Contact Melissa C. Mannion

REPORT GUIDE

Client	Hani	Ford	
Contract	No.	630	
Case no	SDG	K0263	

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- * The preparation batches are shown in the same order as the Method Summary Reports are printed.
- * Only analyses of planchets relevant to the SDG are included.
- * Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- * The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified. Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

REPORT GUIDES
Page 2
SUMMARY DATA SECTION
Page 23

 Lab id
 EBRLNE

 Protocol
 Hanford

 Version
 Ver 1.0

 Form
 DVD-RG

 Version
 3.06

 Report date
 05/09/06

SAMPLE DELIVERY GROUP K0263

SDG 7403 Contact Melissa C. Mannion

REPORT GUIDE

Client	Hani	ford	
Contract	No.	630	
Case no	SDG	K0263	

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- * TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- * SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- * The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- * PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- * For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- * The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

REPORT GUIDES
Page 3
SUMMARY DATA SECTION
Page 24

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06Report date 05/09/06

SAMPLE DELIVERY GROUP K0263

SDG 7403 Contact Melissa C. Mannion

REPORT GUIDE

Client	Hani	ford
Contract	No.	630
Case no	SDG	K0263

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- * TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- * The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- * ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- * A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- * When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

REPORT GUIDES

Page 4

SUMMARY DATA SECTION

Page 25

Lab id EBRLNE
Protocol Hanford

Version Ver 1.0

Version 3.06

Report date <u>05/09/06</u>

SAMPLE DELIVERY GROUP K0263

SDG 7403 Contact <u>Melissa C. Mannion</u>

GUIDE, cont.

Client	Hanford	
Contract	No.	630
Case no	SDG	K0263

DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
- H Similar to 'L' except the recovery was high.
- P The RESULT is 'preliminary'.
- X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
- 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

* An MDA is underlined if it is bigger than its RDL.

REPORT GUIDES
Page 5
SUMMARY DATA SECTION
Page 26

 Protocol
 Hanford

 Version
 Ver 1.0

 Form
 DVD-RG

 Version
 3.06

Report date <u>05/09/06</u>

Lab id EBRLNE

SAMPLE DELIVERY GROUP K0263

SDG 7403 Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_K0263

DATA SHEET

- * An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.
- * A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- * When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

REPORT GUIDES
Page 6
SUMMARY DATA SECTION
Page 27

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-RG</u>

Version 3.06
Report date 05/09/06

SAMPLE DELIVERY GROUP K0263

SDG 7403 Contact Melissa C. Mannion

REPORT GUIDE

Client	Hanford		
Contract	No.	630	
Case no	SDG	K0263	

LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- * An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 - 1. The error of RESULT, including that introduced by rounding the result prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

- 2. The error of ADDED.
- 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.
- * The recovery is underlined if it is outside either of these ranges.

REPORT GUIDES
Page 7
SUMMARY DATA SECTION
Page 28

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/09/06

SAMPLE DELIVERY GROUP K0263

SDG 7403 Contact Melissa C. Mannion

REPORT GUIDE

Client	Hanford		
Contract	No.	630	
Case no	SDG	K0263	

DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent.

If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTs. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- * The second limit for the RPD is the larger of:
 - 1. A fixed percentage specified in the protocol.

REPORT GUIDES
Page 8
SUMMARY DATA SECTION
Page 29

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/09/06

SAMPLE DELIVERY GROUP K0263

SDG <u>7403</u> Contact <u>Melissa C. Mannion</u>

GUIDE, cont.

Client	Hanford		
Contract	No.	630	
Case no	SDG	K0263	

DUPLICATE

- 2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.
- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

REPORT GUIDES
Page 9
SUMMARY DATA SECTION
Page 30

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0

Form DVD-RG

Version 3.06

Report date <u>05/09/06</u>

SAMPLE DELIVERY GROUP K0263

SDG 7403 Contact Melissa C. Mannion

REPORT GUIDE

Client	Hanford		
Contract	No.	630	
Case no	SDG	K0263	

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 - 1. The errors of the two RESULTs, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

- 2. The error of ADDED.
- 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits

REPORT GUIDES
Page 10
SUMMARY DATA SECTION
Page 31

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/09/06

SAMPLE DELIVERY GROUP K0263

SDG 7403 Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K0263

MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

* The recovery is underlined (out of spec) if it is outside either of these ranges.

REPORT GUIDES
Page 11
SUMMARY DATA SECTION
Page 32

Lab id EBRLNE
Protocol Hanford

Version Ver 1.0

Form <u>DVD-RG</u> Version <u>3.06</u>

Report date <u>05/09/06</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0263

SDG <u>7403</u> Contact <u>Melissa C. Mannion</u>

REPORT GUIDE

Client	Hani	Eord	
Contract	No.	630	
Case no	SDG	K0263	

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- * Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- * Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

REPORT GUIDES
Page 12
SUMMARY DATA SECTION
Page 33

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/09/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0263

SDG 7403 Contact Melissa C. Mannion

GUIDE, cont.

Client	Hani	ford
Contract	No.	630
Case no	SDG	K0263

METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- * Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
- * If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

MDAs are underlined if greater than the printed RDL.

- * Aliquots are underlined if less than the nominal value specified for the method.
- * Prepareation factors are underlined if greater than the nominal value specified for the method.
- * Dilution factors are underlined if greater than the nominal value specified for the method.
- * Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
- * Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
- * Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

REPORT GUIDES
Page 13
SUMMARY DATA SECTION
Page 34

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/09/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0263

SDG 7403 Contact Melissa C. Mannion

GUIDE, cont.

Client	Hani	ford
Contract	No.	630
Case no	SDG	K0263

METHOD SUMMARY

- * Count times are underlined if less than the nominal value specified for the method.
- * Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- * Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- * Days Held are underlined if greater than the holding time specified in the protocol.
- * Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

REPORT GUIDES
Page 14
SUMMARY DATA SECTION
Page 35

Lab id EBRLNE
Protocol Hanford

Version Ver 1.0

Form <u>DVD-RG</u> Version <u>3.06</u>

Report date <u>05/09/06</u>

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0263

SDG <u>7403</u> Contact <u>Melissa C. Mannion</u>

GUIDE, cont.

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG_K0263</u>

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

REPORT GUIDES
Page 15
SUMMARY DATA SECTION
Page 36

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/09/06

Washington Closur	re Hanford	C	HAIN	OF CUST	ODY/S	AMPI	LE	ANALY	YSIS	REQUES	$\overline{\mathbf{T}}$	RC-	048-367	Page 1	of 2
Collector DAPASEX F. N. HALL			any Cor		Telephor					Project Coord KESSNER, JH		Price Code	7N	Data Tu	naround
Project Designation 100 Area and 300 Area Com	ponent of the RCBRA V		ling Loc -N-26	cation KL	263	(740	23			SAF No. RC-048		Air Quality		45 l	Days
Ice Chest No. ERC - 99	9-063		Logboo l -1592	k No.		COA Method of Shipment FED EX						 			
Shipped To EBERLINE SERVICES LI	ONVILLE	Offsit	e Prope	rty No. AO	603/8 Bill of L				Bill of Ladin SEE OSPC	/Air Bill N	lo.				
POSSIBLE SAMPLE HAZA POTENTIAL RADIOACTIVE			P	Preservation None		HNO3 to <2	рΗ	HNO3 to pH	HNO3 to	o pH HNO3 to pH	HNO3 to p	H HNO3 to pH	Cool 4C	Cool 4C	Cool 4C
 	Storage		Тур	e of Container	P	G/P		G/P	G/E	G/P	G/P	G/P	aG	aG	aG
No				of Container(s)	1	1		1	1	I	i	1	3	2	3
NONE				Volume	125mL	1000m	aL	1000mL	10001	mL 1000mL	1000mL	. 500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS					Tritium - H3	See item (Specia Instruction	u 1	Strontium- 89,90 Total Sr	Isotop Thoria (Thorium	um Uranium		See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081
Sample No.	Matrix *	Sample Date		Sample Time		سائندين المنطأ					77-72				
J11 J 28	WATER	MAR 202	006	1102	X	X	4	<u> </u>		<u>\</u>	$\perp \lambda$		<u> </u>		
						 	-			- 		 			
				<u> </u>			-					 			
		<u> </u>		<u> </u>		 	1			 	1				
CHAIN OF POSSESSIO		Sign/Prin			L		PECL	AL INSTR	UCTIO	ONS			-		Matrix *
Relinquished By/Removed From Date/Time Received By/Stored In Date/Times Re				te/Time 0 6 :	900 M 70 PO R	Cobalt-Co	60, Europium n-238} Metals - 60 m, Calcium, enum, Nicke	1-152, Eu 10 (Full I Chromiu I, Phosph Jium, Zin Ilable to s from 3	3728	oium-155, Po Antimony, Art Iron, Lead, Selenium, Silic	tassium-40, Rutho senic, Barium, Be Lithium, Magnesi	enium-106, Ura ryllium, Bismu um, Manganes m, Strontium,	mium-235, th, Boron, e, Thallium,	S=Soil SE=Sodiment SO=Sodiment	
LABORATORY Received E SECTION	у				Tie	tle							Γ	ate/Time	
FINAL SAMPLE Disposal M DISPOSITION	lethod					_		Dispo	sed By		.,,		1	Date/Time	

EBERLINE

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

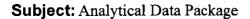
ke263

7404 7403

Client:	W.C.	HANF	<u>ano</u>	City	MCHLAND	State	WA	<u> </u>			
Date/Ti	Client: W.C. HANFOND city WCHLAND State WA Date/Time received 3/32/06 9:30Coc No. PC-048-367										
Container I.D. No. 70. 99.063 Requested TAT (Days) P.O. Received Yes [] No []											
				INSPE	CTION						
1.	Custody	seals on st	nipping contain	er intact?	`	res [X]	No [] N//	٩ []			
2.	Custody	seals on st	nipping contain	er dated & signe	ed?	es [🗡]	No [] N//	A []			
3.	Custody	seals on sa	ample containe	rs intact?	\	/es [χ΄]	No [] N//	۱ []			
4.	Custody	seals on sa	ample containe	rs dated & signe	ed?	/es [-{ }	No [] N//	A []			
5.	Packing	material is:		1		Wyet[]	Dry [\ /]				
6.	Number	of samples	in shipping co	ntainer.	Sample Matrix $\underline{\mathcal{N}}$	<u> </u>	·	i			
7.	Number	of containe	rs per sample:		(Or see CoC						
8.			ect container		Yes [Y] No [
9.	Paperwo	ırk agrees v	vith samples?		Yes [X] No []					
10.	Samples	have: Ta	ape[] Haza	ard labels []	Rad labels [] Appro	priate san	npie labels [^	√]			
11.	Samples	are: In	good condition	n [X] Leakir	ng [] / Broken Cont	ainer[]	Missing [}			
12.	Samples	are: Pres	erved [X] N	ot preserved [X] pH <u>1/7</u> Preserv	ative					
13.	Samples are: Preserved [X] Not preserved [X] pH 1/7 Preservative										
Į		·									
						<u></u>	- <u></u>				
]											
14.	Was P.M	M. notified	of any anomali	es? Ye		Date					
15.	Inspecte	ed by	Muy	Date:	13 27 06 Time:	10:4	5	!			
Cus	tomer	<u> </u>	1	T	Customer Sample						
1	ple No.	срп	`mR/hr	Wipe	No.	cpm	mR/hr	wipe			
ļ	-	}		 							
}		 		 	<u> </u>						
ļ		ļ		 		<u> </u>	 _				
}											
		{			}						
]	,			<u> </u>							
<u></u>											
Ion Cha	ımber Se	r. No.			Calibration date						
Alpha M	leter Ser.	. No	0.		Calibration dateCalibration dateCalibration date						



Joan Kessner WC-Hanford 3190 Washington Way MSIN H9-03 Richland, WA 99354



Dear Ms. Kessner:



LvLI Batch #	0603L574
SDG#	K0263
SAF#	RC-048
Date Received	3/22/06
# Samples	1
Mat\rix	Water
Volatiles	
Semivolatiles	Χ
Pest/PCB	X
PAH	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	Χ
Inorganics	Χ

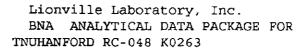
The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,

Lionville Laboratory Incorporated

ONette S. Johnson Project Manager

r:\group\pm\orlette\tnu-hanford\data\b_ltrs.doc



DATE RECEIVED: 03/22/06

LVL LOT # :060355

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11J28	001	W	06LE0230	03/20/06	03/27/06	03/31/06
J11J28 J11J28	001 MS 001 MSD	W W	06LE0230 06LE0230	03/20/06 03/20/06	03/27/06 03/27/06	03/31/06 03/31/06
LAB QC:						
SBLKVL	MB1	M	06LE023 0	N/A	03/27/06	03/29/06
SBLKVL	MB1 BS	W ·	06LE0230	N/A	03/27/06	03/29/06
SBLKVL	MB1 BSD	W	06LE0230	N/A	03/27/06	03/29/06



Case Narrative

Client: TNU-HANFORD RC-048

LVL#: 0603L574

SDG/SAF # K0263/RC-048

W.O. #: 11343-606-001-9999-00

Date Received: 03-22-2006

SEMIVOLATILE

One (1) water sample was collected on 03-20-2006.

The sample and its associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3520C on 03-27-2006 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 03-29,31-2006.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
- 2. The sample was extracted and analyzed within required holding time.
- 3. Non-target compounds were detected in the sample.
- 4. All surrogate recoveries were within acceptance criteria.
- 5. Fifteen (15) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 6. Six (6) of one hundred twenty-eight (128) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 7. The method blank contained the common laboratory contaminant Di-n-butylphthalate at a level less than the CRQL.
- 8. Internal standard area and retention time criteria were met.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 3 pages.



- 9. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
- 10. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
- 11. I certify, that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data, contained in this hard-copy data package, has been authorized, by the Laboratory Manager or a designee, as verified by the following signature.

Laboratory Manager

Lionville Laboratory Incorporated

som\gonip\data\bna\tnu-hanford\0603-574.doc

Lionville Laboratory	Sample Discre	pancy Repor	t (SDR) SDR	#: 06 MS111
Initiator: Shorm Saylor	Batch: <u>0603</u>	LS 74	Parameter:	8270
Date: 4-5-06 ·	Samples: 00/	ms, msd, Dr. 810	Matrix:	Agras
Client: Twu	Method: SW846	MCAWW/CLP/	Prep Batch: _	061E0230
1. Reason for SDR a. COC Discrepancy Tech Pro	file Error Client	r Request	Sampler Error on C-O	-c
	tion Error Wron			
b. General Discrepancy	_			
	Container Broken			Label ID's Illegible
Hold Time Exceeded1 Improper Bottle Type1	nsumcient Sample Not Amenable to Anal	Preserva vsis	ation Wrong	Received Past Hold
Note*: Verified by [Log-In] or [Prep Group] (c		, 0.0		
c. Problem (include all relevant spe		ta if necessary)		
Dnonweg of 3,3'-dichlore	penziding in the	: msd + the	• •	•
Downery of several onal Several sale companis brand hier	yter in the man	Wylhama majnix	spikedy, blanks	ike + blunktpiked
Several sply companies brand high	15064/6/06	(Ychloroanilo	(4) (4) (4) (4) (4) (4) (4) (4) (4) (4)	intraniline) (4chlowenine)
2. Known or Probable Causes(s)				
DE loss due to highly	erratic Chamas	humphic behavi	rof the com	unde
26 103 00 -12 17			· · · · · · · · · · · · · · · · · · ·	
3. Discussion and Proposed Action Re-log Entire Batch Following Samples:	n !	escription:		
Re-leach				
Re-extract Re-digest		17	•	
Revise EDD	/]			
Change Test Code to Place On/Take Off Hold (circle)	- / .	/ /,		
4. Project Manager Instructionssk		CX 4/5/6	4	· · · · · - · · · · · · · · · · · · · ·
Concur with Proposed Action	mature/date: 44	47 - 7 PI	-	
 Disagree with Proposed Action; 	See Instruction	<i>V</i> .		
Include in Case NarrativeClient Contacted:				
Date/Person				
Add Cancel	,			
	1. 110101	04-5-1	***	
5. Final Actionsignature/date:	gestilanalysisi (circle)		ination:	
Included in Case Narrative		,		
Hard Copy COC Revised Electronic COC Revised				
EDD Corrections Completed				
When Final Action has been record	led, forward origina	to QA Specialist fo	or distribution and fi	ilng.
Route Distribution of Completed SD	R	Route Distribu	tion of Completed SD	R
X Initiator	•	Meta	als: Beegle	
X Lab General Manager M. X Project Mgr: Stone Johnson			ganic: Perrone LC: Kiger	
Data Management: Stilwe			Rychlal(Daley	
Sample Prep: Beegle/Kige		Log-	in: Perry	
		Adm Othe		
				

GLOSSARY

DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.

sb\10-03\gloss.doc



GLOSSARY

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Suffix added to sample number to indicate that results are from a diluted analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP, Z = Indicates Spiked Compound.

sb\10-03\gloss.doc



TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following 'flags' are used to indicate the technical reasons for quan modifications:

- MP Missed Peak: Manually added peak not found by automatic quan program.
- PA Peak Assignment: Quan report was changed to reflect correct peak assignment.
- RI Routine Integration: Routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the Dichlorobenzene isomers on the VOA packed column and Benzo (b) fluoranthene /Benzo (k) fluoranthene which are poorly resolve on the BNA column.
- SP Split Peak: The automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- **CB Co-elution/ Background:** Peak was manually integrated to eliminate contribution from co-eluting compounds, background signal, or other interference.
- PI Proper Integration: A peak with poor or inconsistent integration (i.e., excessive tail) was properly integrated manually.

L VL-21-21-035/A-08/93



Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 04/06/06 15:27

	Cust ID:	J11J28	3	J11J2	3	J11J2	8	SBLKVL		SBLKVL BS		SBLKVL BS	SD
Sample	RFW#:	001	L	001 M	3	001 MS	D	06LE0230-M	31	06LE0230-1	MB1	06LE0230-	-MB
Information	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	R
	D.F.:	1.0		1.0	00	1.	00	1.00)	1.	00	1.	.00
	Units:	ug/I		ug/I	Ĺ	ug/	L	ug/L		ug/	L	ug/	/L
	Nitrobenzene-d5	66	8	69	ક	89	ક	70	*	81		82	
Surrogate	2-Fluorobiphenyl	57	ક	70	8	84	왐	64	왕	75	ક	82	
Recovery	Terphenyl-d14	83	` &	69	૪	87	8	112	४	80	뫟	79	
	Phenol-d5	66	&	71	욯	85	*	71	웋	84	웋	77	
	2-Fluorophenol	64	8	68	용	82	ક	75	욯	85	*	79	
	2,4,6-Tribromophenol	68	& = 3	81	왕 61	104	*	72	용	94	8	75	
_, ,		10	 D	75	% ==TT==	93	==I⊥ %	.======== 10	n TT	.=== === == 89	ક 1 I ==	84	
bis(2-Chloroe	thyl)ether	10	U	75	ş	101	왕		U	89	8	91	
2-Chloropheno	01	10	Ū	73	ક્ષ	100	웅		Ū	91	*	93	
1,3-Dichlorob	enzene	10	U	58	ક્ષ	7 5	૪	10	U	65	욯	72	
1,4-Dichlorob	penzene	10	ប	58	ક્ર	76	옿	10	U	66	ક	72	
1,2-Dichlorob	enzene	10	U	62	*	80	*	10	U	69	웋	77	
2-Methylpheno		10	U	72	ક્ર	100	*	10	U	95	¥	104	
	-Chloropropane)	10	U	72	*	95	૪	10	U	84	ક્ર	88	
4-Methylpheno	01	10	U	74	*	99	¥	10	U	95	ક	107	
N-Nitroso-di-	n-propylamine	10	U	74	8	97	ક્ષ	10	U	88	ક્ર	96	
Hexachloroeth	nane	10	Ŭ	57	%	73	왐	10	U	64	활	70	
Nitrobenzene_		10	U	. 71	%	102	*	10	U	84	*	90	
Isophorone		10	U	77	*	99	ક	10	U	91	४	98	
2-Nitrophenol		10	U	72	8	101	왐	10	U	83	૪	90	
2,4-Dimethylp	henol	10	U	63	ક્ષ	98	왐	10	U	87	ક્ર	84	
	ethoxy) methane	10	U	72	ક્ષ	78	욯	10	U	80	ક	58	
2,4-Dichlorop		10	U	71	ક્ષ	100	울	10	U	86	各	93	
1,2,4-Trichlo	orobenzene	10	U	62	ક	86	ક	10	U	70	૪	78	
Naphthalene		10	U	67	૪	91	૪		U	75	왕	85	
	ne	10		124	* %	13		10	U	7	* %	7	*
Hexachlorobut		10	U	65	*	90	૪	10		73	ક	84	
	thylphenol	10	U	76	8	100	ક	. 10		90	*	93	
2-Methylnapht		10		71	%	97	¥	10	U	83	ક	93	
	clopentadiene	10	U	54	જ	76	&	10	U	56	ક્ષ	67	
	prophenol	10	U	85	ક	112	* %	10	Ü	92	*	90	!
2,4,5-Trichlo	prophenol	25	U	82	ક	106	옿	25	Ū	90	윰	97	

Cust ID:	J11J28	3	J11J28	3	J11J28	8	SBLKVL		SBLKVL BS	SBLKVL BS	SD
RFW#:	001	L	001 MS	5	001 MSI	D	06LE0230-M	B1	06LE0230-MB1	06LE0230	- MB 1
2-Chloronaphthalene	10	U	75	ક	101	કુ	10	U	85 %	91	8
2-Nitroaniline	25	U	85	8	110	*	25	Ŭ	93 %	95	ą
Dimethylphthalate	. 10	Ū	74	४	85	૪	10	U	89 %	77	ş
Acenaphthylene	10	U	74	왐	100	૪	10	U	85 %	84	8
2,6-Dinitrotoluene	10	U	77	૪	89	*	10	Ū	89 %	95	8
3-Nitroaniline	25	U	120	ક્ર	14	*	25	U	7 * %	11	8
Acenaphthene	10	U	76	8	98	*	10	Ū	86 %	93	8
2,4-Dinitrophenol	25	U	87	૪	125 *	* %	25	Ū	121 * %	130	* %
4-Nitrophenol	25	U	94	ક	112 *	* %	25	Ū	103 %	96	ę
Dibenzofuran	10	Ŭ	7 5	용	95	왕	10	Ū	87 %	92	ş
2,4-Dinitrotoluene	10	Ū	83	ક્ર	95	왐	10	Ū	95 %	102	ě
Diethylphthalate	10	U	· 75	ક્ર	83	8	10	Ū	92 %	97	ş
4-Chlorophenyl-phenylether	10	U	75	ફ	92	ક્ર	10	Ū	87 %	93	ę
Fluorene	10	U	76	ષ્ટ્ર	96	*	10	Ū	89 %	94	ę.
4-Nitroaniline	25	U	100	*	33	¥	. 25	U	22 %	23	ş
4,6-Dinitro-2-methylphenol	25	U	89	४	121	웉	25	Ū	116 %	97	8
N-Nitrosodiphenylamine (1)	10	U	55	*	38	*	10	Ū	60 %	32	ž
4-Bromophenyl-phenylether	10	U	66	*	92	*	10	U	84 %	81	ş
Hexachlorobenzene	10	U	79	क्ष	115 *	k g	10	Ū	97 %	95	*
Pentachlorophenol	25	U	105 *	ક	138 *	t %	25	U	139 * %	89	ę.
Phenanthrene	10	U	86	ક્ર	129	k %	10	U	104 %	109	ą
Anthracene	10	U	78	ક્ષ	108	왐	10	U	93 %	84	8
Carbazole	10	U	88	8	97	*	10	Ū	98 %	60	۔ پو
Di-n-butylphthalate	0.8	JB	83	ક	109	욯	2	J	90 %	78	8
Fluoranthene	10	U	97	*	130 4	٠ ¥	10	U	97 %	92	8
Pyrene	10	U	71	ક	94	8	10	U	83 %	88	ş
Butylbenzylphthalate	10	U	75	¥	101	*	10	Ū	90 %	96	8
3,3'-Dichlorobenzidine	10	Ŭ	89	8	0	8	10	Ū	1 %	0	ş.
Benzo(a)anthracene	10	U	82	*	108	g.	10	U	93 %	99	ę F
Chrysene	10	Ū	79	*	107	¥	10	Ū	90 %	100	· *
bis(2-Ethylhexyl)phthalate	10	U	78	४	106	ક	10	Ü	91 %	99	· &
Di-n-octyl phthalate	10	Ü	81	*	140	ş	10		95 %	124	- او
Benzo(b) fluoranthene	10	Ū	87	૪	145 *	٠ ¥	10		93 %	123	용
Benzo(k) fluoranthene	10	U	82	ş	144 *		10		91 %	112	e 8
Benzo(a)pyrene	10	U	79	¥	129		10		89 %	108	ક
Indeno(1,2,3-cd)pyrene	10	U	86	ક	144 *		10		97 %	119	*
Dibenz(a,h)anthracene	10	U	87	*	150 *			Ū	96 %	120	*
Benzo(g,h,i)perylene	10	-	83	¥	130	- %		Ū	93 %	112	ን የ
(1) - Cannot be separated from Diph			= Outside					u	23 8	112	15

1 F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT	SAMPLE	NO.	
J11J28			

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-048 K0263

Matrix: (soil/water) WATER Lab Sample ID: 0603L574-001

Sample wt/vol: $\underline{1000}$ (g/mL) \underline{ML} Lab File ID: $\underline{D033109}$

Level: (low/med) <u>LOW</u> Date Received: <u>03/22/06</u>

% Moisture: ____ decanted: (Y/N) __ Date Extracted: 03/27/06

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/31/06

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 4 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	1.983	3	J
2.	UNKNOWN	5.524	2	J
3.	UNKNOWN	13.879	5	J
4.	UNKNOWN	19.228	30	J

1 F

CLIENT SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

	 SBLKVL	
ı		

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-048 K0263

Matrix: (soil/water) WATER Lab Sample ID: 06LE0230-MB1

Sample wt/vol: 1000 (g/mL) ML Lab File ID: D032908

Level: (low/med) LOW Date Received: 03/27/06

% Moisture: _____ decanted: (Y/N)__ Date Extracted: 03/27/06

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/29/06

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: __7.0

Number TICs found: 0 (ug/L or ug/Kg) uq/L

ĺ						
j	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
ĺ	=======================================		======	======================================	====	;
1	1.	_				Į
		<u>'</u>	1			ı

Lionville Lab	oratory	Use Only	Custo	ody Ti	ran	sfer	Rec	ord/	Lab	Wo	ork	Re	∍qı	ıes	t F	age_		t <u>/</u>	_		T.	DI
06030	1 <	714		FIELD I	PERS	ONNE	L: COMP	LETE O	NLY SH	ADE	D AR	EAS	-					Se	99	SRÇ	è	2000
											Ac	DF	GH				I		7			
Client 7NO	C-H+	ANFORD.	5.4F#	RC-04	18	/ f-	Refrige	rator #	1 .	ŀ	2	2	3			, .	3	<u> </u>	2			
Est. Final Pro		A STATE OF THE STATE OF				-1.		Container	Liquid		C	G	-		,		1		1			
		3-606-0		•		**			Solid		L	L	L			-	520	<u> </u>	625	 		
roject Conta	ct/Phor	ne # Project Manage	<u> </u>	·			Volume	1	Solid		<u>-</u>		٦					ļ	,,,,,			
onville Labo	pratory :	Project Manage	er <u>() </u>	7 7/11/			Preserv	ratives		 	-	_	_	 	_	-	HHM	A	2534			
ic <u>yeec</u>	<u> </u>	1 Sta	<u>حــــ TAT</u>	Occupa			=) 				ANIC					INC	PG	wr			
ate Rec'd	3/22	2/04	Date Due	4/21/6	40		ANALY: REQUE			δĀ	¥ M	Pest E	23				Meta	5	NUT			
IATRIX	T			<u>, : </u>	T		·	T					1		Lior	ville L	aborato	ry Use	Only		1	L
ODES: - Soil E Sediment O - Solid L Sludge I - Water	Lab ID	С	llent ID/Descrip	ption		Matrix QC Chosen (/)	Matrix	Date Collected	Time Collected		CURSH	DC-08H	6F2B				CENTERA		INSIE			
- Air	001	71172	የ		2 1			3/06/06	1102		3	3	2				1	-	1			
S - Drum Solids						7. t (*)				7. E	3.5					1	<u> </u>					
L - Drum Uguids									[]	1,75		* !										
- EP/TCLP Leachate		41				· 1 ***							7				<u> </u>					
't - Wipe - Other				territore (gener	1 1	9.7						12 A					ļ					
- Fish								21.5	. Lw							٠ ٔ						
	,			-						1.7	-						<u> </u>					
		- 1								3.67		-				ļ						
	1		26. 7	1111			25.25					<u> </u>		3	<u> </u>	<i>-</i>		<u> </u>	l.,		L	
Special Instru	i)= [HSLH Bi, Sn, ll	B, Li, Mi	o,P,Si,	Sr,	·	TE/REVISIO	. 1 2 3 4					-									
Relinquishe	d	Received by	Date	Time	Re	elinquishe by	od .	Received		Date	Tir	ne	F	lelinqui by				eived by		Date		Time
Ly 5	10	Hemis	3/2/06	0920				···						JON	MPO	SITE			OF	₹IGI	NAI	har
7		' 7					1			~					ASTE				RE	WR	TT	EN 1

Washington Closi	ure Hanford	C	HAIN OF CUS	TODY/S	AMPLE	EANAL	YSIS	REQUES	Г	RC	-048-367	Page 1	of <u>2</u>
Collector DAPATEK			oany Contact AN KESSNER	Telepho 375-4				Project Coord KESSNER, JH	inator	Price Code	7N		rnaround
Project Designation 100 Area and 300 Area Cor	mponent of the RCBRA		oling Location 9-N-26					SAF No. RC-048		Air Quality	' []	45	Days
Ice Chest No. ERC -	99-062		Logbook No. -1592		COA BESRAS	5520		Method of Shi FED EX	pment				
Shipped To EBERLINE SERVICES /	TONVILLE	Offsi	te Property No.	06033	38			Bill of Lading SEB OSPC	/Air Bilí N	lo.			
POSSIBLE SAMPLE HAZ	ARDS/REMARKS												
POTENTIAL RADIOACTIVE	E < DOT LIMITS		Preservation	None	HNO3 to pH <2	HNO3 to pH	#NO3 ₪ <2	· 4	HNO3 to ;	<2	Cool 4C	Cool 4C	Cool 4C
Special Handling and/or	Storage		Type of Container	P	G/P	G/P	G/P	G/P,	G/P	G/P	aG	aG	aG
Cool 4°C	Storage		No. of Container(s)	1	ı	I	1	1	1	1	3	2	3
COS/ 9 C			Volume	125mL	1000mL	1000mL	i 800n	nL 1000maC	1000ml	. 500mL	1000mL	1000mL	1000mL
	SAMPLE ANA	LYSIS		Tritium - H3	See item (1) in Special Instructions.	Strontium- 69,90 Total Sr	lactopi Thorius (Thorium	m Uranium	Radium -22 Ra-228	5; See item (2) in Special Instructions.	Sensi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081
			•					Uranium-238)					
Sample No.	Matrix *	Sample Date	Sample Time		10 100							###	San
J11J28 .	WATER	MAR 202	1102							X	Х	X	X
		<u> </u>											
		ļ		· ·		·							
·						,					<u> </u>		<u> </u>
CHAIN OF POSSESSI	ON	Sign/Prin	at Names		l cons			<u> </u>			<u> </u>	<u> </u>	Administration in
Retinquisties Backenovach (h)	2.D. 2006 12.			hate/Time /ZS		CIAL INSTR							Matrix *
	+ G/	900mc	11Xpl 3200	06	- (., -	Samma Spec - (lt-60, Europiun	(Full List) n-152, Ear	(Americium-241, A opium-154, Europi	Antimony-12 um-155, Poi	5, Beryllium-7, C assium-40, Ruthe	Cesium-134, Ce cuium-106, Ura	ະsium-137, ມາເພກ-235.	SE=Sediment
Relinquished By/Removed From	Date/Time	Received By/Sto	ICO DI	ate/Time	Urani	ium-238)							SO=Solid SI=Sludge W = Water
Clinquished By Removed From	006 /350 Date/Time	Received By/Sto	9 32006 /3	ate/Time #	Cadn	riwn, Calcium,	Chromius	ist) (Aluminum, A: n, Cobalt, Copper,	iron, Lead, I	ithium, Magnesi	um, Manganes	c,	O=Oii A≈Air
3728 # 2A 3-21			son Redment	3-21	MOIN	bdenum, Nicke Jranium, Vans	el, Phospho dium, Zinc	orus, Potassium, Se :): Mercury - 747(lenium, Silic I - (CV)	on, Silver. Sodiu	ım, Strontium, 1	Thailium.	D\$=Drum Sol DL=Drum Liq
Relinquished By/Removed From U	NCH Date/Time 150	Received By/Sto		ate/Time				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(01)				T≃Tissue Wi=Wipe
Edmonton IR Alm		FED E	К				•						L=Laguid V=Vegetation
Relinquished By/Removed From	Date/Time	Receipted By/Sto	red la D	ate/Time	Perso	onnel not av	zilable to	-					X=Other
Relinquished By/Removed From	Date/Time	Received By/Sto		ate/Time	Ref	quish sample 2A on 3	- 1 <u>2-(/ (</u>	728 7.6					
LABORATORY Received I	Ву			Tit	le						D	Pate/Tinic	
FINAL SAMPLE Disposal N DISPOSITION	Method				· · ·	Dispo	med By	.			I	Date/Time	
THE STATE OF THE S									-				

Washington Closu	re Hanford		CHAIN OF CUST	FODY/S	AMPLE	EANAL	YSIS R	REQUEST	r	RC	-048-367	Page 2	of <u>2</u>
Collector DUPATES		Con	DAN KESSNER	Telephor 375-4	ne No.		P	roject Coordi ESSNER, JH		Price Code	7N	Data Tu	irn aro us
Project Designation 100 Area and 300 Area Con			ppling Location 99-N-26					AF No. C-048		Air Quality	v 🗆	45	Days
Ice Chest No. ERC-9	99-062		d Logbook No. L-1592	· ·	COA BESRAS6	5520	M	lethod of Shir FED EX	ment				
Shipped 'To EBERLINE SERVICES (L	IONVILLE	Offi	ite Property No. AO	6033	8		E	Bill of Lading	Air Bill I	Ño.			
POSSIBLE SAMPLE HAZ	ARDS/REMARKS						<u> </u>		<u> </u>		T	1	7
POTENTIAL RADIOACTIVE	< DOT LIMITS		Preservation	Cool 4C	H2SO4 to pH <2 Cool 4C								
Special Handling and/or	Storage		Type of Container	P	G/P								
Cool 40C	_		No. of Container(s)	1	1					_			
			Volume	125mL	125mL								
	SAMPLE ANA	ALYSIS		See item (1) is Special Instructions.	NO2/NO3 - 353.2								
Sample No.	Matrix *	Sample Dat	: Sample Time	2000							1.75 (B. 18)		Sulface Sulface
J11J28	WATER	MAR 20	7006 1107		X								
<u></u>			<u> </u>	 									ļ
		. 1	· · ·			<u> </u>		+		-			
				<u> </u>						_	 		
CHAIN OF POSSESSIO	on las		nt Names		SPEC	LAL INSTR	UCTIONS		<u>. </u>	<u></u>	<u></u> i	L <u> </u>	Matriz
Reli MARKER Remains 17 TO THE MAR Reliquished By/Removed From	Date/Time 12: 2006 / 350	Received By/Si	SIAU 320 C ored in Di P 32106	06 ¹²⁵ ate/Time /350		C Anions - 300.0	0 {Bromide,	Chloride, Fluori	de, Nitratc,	Nitrite, Phosphat	te. Sulfate]		S=Soil SE=Sedim SO=Soiki SI=Sludge W = Water O=Oil
Relinquished By/Removed From	Date/Time	Received By/St		ate/Time 090									A=Air
Relinquished By/Removed From 3728 # 24 3-21 Relinquished By/Removed From General Science Language Lang	Date/Time OG OGOO CH Date/Time / Suppose 3-2	Roccived By/St R. Estatua To a Received By/St	from IK Blanden ored in Da										DS=Drun DL=Drun T=Tissuc Wie Wipe L=Liquisi
Relinquished By/Removed From 3728 # 24 3-21 Relinquished By/Removed From 6 R. Edmund Som La Religensished By/Removed From	Date/Time -06 0900 JCH Date/Time (Received By/SI TRE Glanum TO a Received By/SI TO CHED Received By/SI	See Il Plander ored in Da EX ored in Da 222	~ 3-21-0 ate/Time	Perso relin	nnel not avai quish samples 2H on 3	s from 372	. €					DS=Drum DL=Drum T=Tissue Wie Wipe L=Liquisi
Relinquished By/Removed From 3728 # 24 3-21 Relinquished By/Removed From 4 Relinquished By/Removed From 3	Date/Time OG OGOO OCH Date/Time /. Share-time Date/Time Date/Time	Received By/St	See Il Plander ored in Da EX ored in Da 222	~ 3-21-6 ate/Time ate/Time	Perso reline	auish samples	s from 372	8 E			Da	ate/lime	DS=Drum DL=Drum T=Tissue Wie Wipe L=Lequal V=Vegetal

Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU- HANFORD Date: 3/22/06 Purchase Order / Project# / SAF# SOW# / Release #: Sample Custodian: LvLI Batch #: NOTE: EXPLAIN ALL DISCREPANCIES Airbill#792-048034 Samples Hand Delivered or Shipped Comments □ No Seals 2. Custody seals on coolers or shipping D No container intact, signed and dated? 3. Outside of coolers or shipping containers are □ No free from damage? 4. All expected paperwork received (coc and 石Ycs □ No other client specific information) sealed in plastic bag and easily accessible? Cooler # ERC-99-062 °C Temp 5. Samples received cooled or ambient? 6. Custody seals on sample containers intact, □ No ☐ No Scals signed and dated? 7. coc signed and dated? □ No Sample containers are intact? □ No 9. All samples on coc received? All samples □ No received on coc? 10. All sample label information matches coc? □ No 11. Samples properly preserved? □ No 12. Samples received within hold times? PY Yes □ No Short holds taken to wet lab? 13. VOA, TOC, TOX free of headspace? U Yes □ No E N/A 14. QC stickers placed on bottles designated by □ No client? 15. Shipment meets LvLI Sample Acceptance □ No Policy? (Identify all bottles not within policy. See reverse side for policy) 16. Project Manager contacted concerning ☐ Yes ☐ No discrepancies? name/date (or samples Discrepancies outside criteria)

SR-002-B

Lionville Laboratory, Inc. PEST/PCB ANALYTICAL DATA PACKAGE FOR TNUHANFORD RC-048 K0263

DATE RECEIVED: 03/22/06

LVL LOT #

CLIENT ID	LVL	#	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
<u> </u>		· · · · · · · · · · · · · · · · · · ·					
J11J28	001		W	06LE0225	03/20/06	03/23/06	03/28/06
J11J28	001	MS	W	06LE0225	03/20/06	03/23/06	03/28/06
J11J28	001	MSD	W	06LE0225	03/20/06	03/23/06	03/28/06
LAB QC:							
	•						
PBLKDW	MB1		W	06LE0225	N/A	03/23/06	03/28/06
PBLKDW	MB1	BS	W	06LE0225	N/A	03/23/06	03/28/06
PBLKDW	MB1	BSD	W	06LE0225	N/A	03/23/06	03/28/06





Case Narrative

Client: TNU-HANFORD RC-048

LVL#: 0603L574

SDG/SAF # K0263/RC-048

W.O. #: 11343-606-001-9999-00

Date Received: 03-22-2006

CHLORINATED PESTICIDES

One (1) water sample was collected on 03-20-2006.

The sample and its associated QC samples were extracted on 03-23-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 03-28-2006. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8081A.

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

- 1. The sample was extracted and analyzed within required holding time.
- 2. The sample and its associated QC samples received a Copper-Sulfur cleanup according to Lionville Laboratory SOPs based on SW846 method 3660A.
- 3. The method blank was below the reporting limits for all target compounds.
- 4. All surrogate recoveries were within acceptance criteria.
- 5. All blank spike recoveries were within acceptance criteria.
- 6. All matrix spike recoveries were within acceptance criteria.
- 7. The initial calibrations associated with this data set were within acceptance criteria.
- 8. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 9 pages.



- 9. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
- 10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Tain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

som\r:\group\data\pest\tnu hanford\0603-574s.pst



GLOSSARY OF DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.
- .I = Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- **DF** = Dilution Factor.
- NR = Not Required.
- NS = Not Spiked.
- SP = Indicates Spiked Compound.
- P = This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC/MS.
- NPM = No pattern match for multi-component target analytes.

Report Date: 04/26/06 12:18

Lionville Laboratory, Inc.

RFW Batch Number: 0603L574

Pesticide/PCBs by GC, CLP List

Client: TNUHANFORD RC-048 K0263 Work Order: 11343606001 Page: 1

								•				_	
	Cust ID:	J11J28	3	J11J28	1	J11J28	3	PBLKDW		PBLKDW BS		PBLKDW BS	D
Sample	RFW#:	001	L	001 MS	5	001 MSE)	06LE0225-M	B1	06LE0225-B	Œ 1	06LE0225-	MB1
Information	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.0		1.0		1.0		1.0	0	1.0	00	1.	00
	Units:	UG/1	٠	UG/I	,	UG/I	<u>.</u>	UG/L	ı	UG/I		UG/	L
Surrogate: Tetrachlo	ro-m-xylene	97	*	96	*	91	¥	100	*	104	*	96	*
Decachl	orobiphenyl	82	*	79	*	78	8	105	*	103	*	99	*
Alpha-BHC		0.050	:=11=: U	-======= 76	:=Il=: %	==== = ==== 77	=fl %	0.050	=fl U	. ====== 85	==fl %		
gamma-BHC (Lindane)		0.050	U	85	₹ *	87	₹ *	0.050	11	95	₹ *	73 83	¥ ¥
		0.050	Π	84	2	92	*	0.050	IJ	119	r Y	89	*
Heptachlor		0.050	U	84	ş	84	ş	0.050	Ū	92	ł	81	ş
Delta-BHC		0.050	. ប	72	ę.	74	*	0.050	U	82	ş	72	*
Aldrin		0.050	Ū	82	¥	84	ě	0.050	U	92	*	80	*
Heptachlor epoxide		0.050	Ū	116	ł	119	ě	0.050	Ū	94	*	85	¥
gamma-Chlordane		0.050	Ū	87	*	90	*	0.050	U	94	*	85	ł
Endosulfan I		0.050	σ	87	*	90	*	0.050	U	98	と	88	
alpha-Chlordane		0.050	U	86	*	88	*	0.050	U	94	ક	84	*
4,4'-DDE		0.050	U	91	ક	94	¥	0.050	U	102	*	91	ક
Dieldrin		0.050	U	89	*	90	*	0.050	Ū	99	ક્ર	89	¥
Endrin	·	0.050	ū	98	*	. 99	¥	0.050	σ	105	ક	93	¥
4,4'-DDD		0.050	U	98	¥	100	*	0.050	U	110	ફ	104	*
Endosulfan II		0.050	U	87	8	. 89	¥	0.050	U	98	*	86	*
4,4'-DDT		0.050	Ū	92	¥	94	ŧ	0.050	U	99	*	88	*
Endrin aldehyde		0.050	U	77	*	83	*	0.050	U	91	૪	83	ક
Endosulfan sulfate		0.050	U	92	*	94	*	0.050	U	99	*	90	*
Methoxychlor		0.050	U	95	*	98	8	0.050	U	107	¥	96	*
Endrin ketone		0.050	Ŭ	91	¥	93	¥	0.050	Ū	101	*	93	*
Toxaphene		0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC



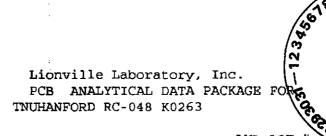
Lionville Lat	oorato	y Use Only		Custo	ody 1	Trai	nsf	er	Rec	ord/	Lab	Wo	ork	Re	equ	les	t P	age_	/ of					VL
0603	, _		1		•					LETE O			D AR	EAS	_	•						SRÇ	•	Q
1603	23	74			• • • • • • • • • • • • • • • • • • • •								Ac	D-F	GH		_		I		7			Ø
Client TNC	1-1	ANFOR	<u>ን</u>	54F#	Ro c	148		:	Refrige	ator#			2	- A-	کی				2		2			
Est. Final Pr	oj. Sar	npling Date			7 -		- 111		#/Type	Container	Liquid Solid		C	G	C				P		P			900
Project #											Liquid		_ ا	L	L	-		-	520		625			<u> </u>
Project Cont Lionville Lab	act/Ph	оле #	rain je m Politika (je m	0.7			·		Volume	•	Solid													
Lionville Lab	orator	y Project Ma	nager	00	7701	10 1			Preserv	ntives			_	_					HNA	H	2504			
oc <u>Sper</u>		Del	2	IAT	pour									ANIC	· ·				INC	RG	w			
Date Rec'd _	3/2	2/06	Date	e Due	4/21	040			REQUE			Š	¥ MB	Pest/	23		•		Metal	ਨ	NUZ			
MATRIX	7				<u> </u>										1		Llon	ville La	borato	ry Use	Only		1	
GODES: 8 - Soil SE - Sediment SO - Soild SL - Studge W - Water	Lei ID		Clien	nt (D/Descri	ption .		Chi	alrix DC osen </th <th>Matrix</th> <th>Date Collected</th> <th>Time Collected</th> <th></th> <th>OURSH</th> <th>DOOSH</th> <th>OFEB</th> <th></th> <th></th> <th></th> <th>NYTALS</th> <th></th> <th>INBNA</th> <th></th> <th></th> <th></th>	Matrix	Date Collected	Time Collected		OURSH	DOOSH	OFEB				NYTALS		INBNA			
O - Oil A - Air	00	711	T 7 8				/ N3			20106	1/27	. A. A.	3	3	2				1		1	1.		
DS - Drum Solids	: KAZI	F 11.3s	1-5-6-								- 1					13,2	-							
DL - Drum Liquids	-						17.4			34.		77.			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1									
L - EP/TCLP Leachate	-				·						4 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			-	11	. in [+
WI - Wipe X - Other	-						1								. * ***									-
F - Fish					. ;			1				5.			94. j-		1.5							
	Ė							-	-				A											
							<u> </u>					la f								 			_	+
				 			1					50.5 mm.					1.11							
• .			100		An in				20.5		77				*	114				<u> </u>				1
D- sale lands				<u> </u>			<u> </u>	DATE	/REVISIO	NS:		<u> </u>	<u> </u>	L	L	<u>. </u>				<u> </u>	I			
Special Instru		HSL+	Bi,B	Lim	o,P. Si	`.Sc			·	1 2		Oli Oli	CR	R		·								
		Sn, W	,	, , -	. ,	•				3							·	<u>-</u>						
										4					 -									
				•		•				5										-	·······			
										. 0.								 -						
Relinquish	ed	Receiv	red	Date	Time			uished y		Received by		Date	Tin	ne	R	elingul by	shed			aived by		Date	Time	
- (- (') -	, 	w///	7	L .	+	4 ├ ──		<u> </u>			+		+					-+-		<u> </u>			4.	\dashv
1. V.		[/ No	Κ.	3/2/06	1000				ļ		1		1	ļ		<u>ال ن</u>	ADA	٠			OF	NDIS	114	- 1

Washington Closus	e Hanford	C	HAIN OF CUST	CODY/S.	AMPL	E ANAL	<u>YSIS</u>	REQUEST	Γ _	RC-	-048-367	Page 1	of 2
Collector DURINER			any Contact An KESSNER	Telephor 375-46	-			Project Coordi KESSNER, JH	nator I	Price Code	7N		rnacound _{(_}
Project Designation 100 Area and 300 Area Comp	potent of the RCBRA V		ling Location -N-26					SAR No. RC-048	A	ir Quality		45	Days &
Ice Chest No. ERC - 9	9-062		Logbook No. 1592		COA BESRA	S6520		Method of Shir FED EX	meni			·	
Shipped To EBERLINE SERVICES / QU	ONVILLE	Offsite	e Property No. Al	06033	38	· 		Bill of Lading	Air Bill No).			
POSSIBLE SAMPLE HAZA	RDS/REMARKS											İ	
POTENTIAL RADIOACTIVE	< DOT LIMITS		Preservation	None	HNO3 10 p	<2	HNO3 (- 4	HNO3 to pH	- 2	Cool 4C	Coul 4C	Cool 4C
6	4		Type of Container	P	G/P	G/P	G/I	P G/P,	G/P	G/P	aG	aG	aG
Special Handling and/or S	torage		No. of Container(s)	1	1	j	1	1	I	ı	3	2	3
COO! 4-C			Volume	125ml.	1000mL	. 1000mi.	1000	mL 1900mL	1000mL	500mL	1000mL	Jm0001	1000กม.
	SAMPLE ANAL	YSIS		Tricken - H3	See item (1) Special Instruction	89,90 Total	lauto; Thoris {Thorism	un Ursalum	Radium -226 Ra-228	; See item (2) in Special Instructions.	Sensi-VOA - 8270A (FCL)	PCBs - 8082	Pesticides - 803 l
Sample No.	Matrix *	Sample Date	Sample Time		10/20						Promote College Marie College	型 化 工作	
J11J28	WATER	MAR 2 0 20	1102							X	X	X	X
							 		<u> </u>				
· ·							<u> </u>		· ·				<u></u>
	:				ļ <u> </u>		 		<u> </u>	<u>-</u>			
CHAIN OF POSSESSIO	N	Sign/Prin	L Names		SPI	ECIAL INSTR	L)NS	L		<u>l</u>	<u> </u>	Matrix *
Relicquistics Bulkernay	125		ed in work Da	16/Time /25	O (1)	- Gamma Spec - ((Full List)	(Americium-241, / Iropium-154, Europi					S=Scril SE=S4dimini
Relinquished By/Removed From	Date/Time	Received By/Stor	ed in Da	ale/Time	Un	anium-238)		•	•				50=9cilid 5la-Shodge
SUPCEMBLE 320	* 1 · · · · · · · · · · · · · · · · · · 		7 32006 /3	50 ue/Time 9 7	C.	dmiun, Calcium,	Chromiu	List) (Alaminum, Ar m, Cobell, Copper,	iron, Lead, Li	ithium, Magnesi	um, Manganeso	: ,	W = Water O⇔Oil A=Air
Relinquished By/Romoved From 3738 # 219 3-4-1	Date/Time 06 0500	Received By/Stor		3-21-	1470			orus, Potassium, Se c); Mercury - 7470		on, Silver. Sodiu	ns, Strontium, T	Daltium,	D\$=Drum Solids DL=Drum Lapuds
Relinquished By/Removed From		A Received By/Sto		ate/Time		,		-,,	(0)				T=T/ssue WieWipe
K. Edmindon IR Dan		FED E	<i>X</i>										L=Lacpud V=Vegetalion
Relinquished By/Removed Fram	Date/Time	Receipt By/Stor	red in Di	nte/Time 0 <u>6 0</u> 7	Pe	rsonnel not ava linguish sample	nilable to	0					X=Other
Relinquished By/Removed From	Date/Time	Received By/Stu		te/Time	Re	f# <u>2A</u> on <u>3</u>	12/1	06		-			}
LABORATORY Received By SECTION				Tit	le						D	ate/Time	
FINAL SAMPLE Disposal Me DISPOSITION	ethod					Dispo	sed By				1	Date/Time	

Washington Closu	re Hanford		СНА	IN OF CUST	CODY/S	<u>AM</u> P	LE	ANAL	YSIS	RE	EQUES7			RC-	048-367	Puge 2	of 2
Collector DUFFACEK				Contact ESSNER	Telephor 375-40						lect Coordi SSNER, JH	nator	Price	Code	7N	Data Tu	rnaround
Project Designation 100 Area and 300 Area Com	ponent of the RCBRA		mpling 199-N-2	Location 6						SAF RC-	F No. 048		Air (Quality		45]	Days
Ice Chest No. ERC-9	9-062	Fi	eld Logi EL-1592	oook No. ?		COA BESR		20			thod of Ship ED EX	ment					999
Shipped Te EBERLINE SERVICES (L.	ONVILLE	Oi	fsite Pr	operty No. AOC	6033	8					of Lading/ EE OSPC	Air Biu I	No.				
POSSIBLE SAMPLE HAZA	RDS/REMARKS												T				
POTENTIAL RADIOACTIVE	< DOT UMITS			Preservation	Cool 4C	H2SO4 (ol 4C						1				
Special Haudling and/or S	Storage		Т	ype of Container	P	G/1			L					_			L
Cool 40C	,.v. 46.		N	a. of Container(s)	1	1											
CVOI 1 C				Volume	125mL	125n	mi.			ľ					' I		
	SAMPLE ANAI	Lysis			See item (1) in Special Instructions	NO2/NO 353.		-									
Sample No.	Matrix *	Sample D		Sample Time							10	Z.M.	常品			(L)	
J11J28	WATER	MAR 2U	200g	1107		X											
				<u></u>	ļ	<u> </u>										·	
					\ <u></u>	}											<u> </u>
													_				
CHAIN OF POSSESSIC	N A M	Sign/P	rint Na	ncs	1	<u> </u>	DVCI	AL INSTR	Herro	NE							Matrix *
Reli QWMATER kement of the F. M. HALL WAR 2	Date/Time /2 50	Received By	Stored In	welf Da							bloride, Fluori	de, Nitrate,	. Nitrite	t, Phosphate	. Sulfate J	,	S=Soil SE=Sodinsent
Relinquished By/Removed From 5 JOA LE J. J. L. 3:	Date/Time	Received By	Stored In	Da	te/Time	_						•					SO=Seid SI=Sludge W = Water
Relinquished By/Removed From	Date/Time	Received By	Stored In	Da	te/Time 090												O≕Oi! A≃Air DS≖Drum Sojida
3728 # 24 3-21 Relinquished By/Removed From G		Received By		IK Blooden	<i> 3-2/-(</i> tc/Time	26											DiaDrum Liquida T=Tissue
K. Edmindson Il	· Samolan 3-21		EX		AG I ME												Wt≃Wipe L=Liquid
Relinguished Ry/Reproved From	Date/Time つよっし のる	Received By			te/Time	, I	Personi	nel notava	ilable to) 1770		-					Vm Vegetation X∞Other
Relinquished By/Removed From	Date/Time	Received By			te/Time		retinqi Ref# _#	uish sample 24 on 3	1 <u>2/</u> 1	<u>0 G</u>							
LABORATORY Received By SECTION	· · · · · · · · · · · · · · · · · · ·	 l		<u> </u>	Tit	ke		-				<u>-</u>			Da	nte/Time	
FINAL SAMPLE Disposal M DISPOSITION	ethod	 _						Dispos	ied By						D	ate/Time	
									**					 -			

Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU-HANFORD Date: 3/22/06 Purchase Order / Project# / SAF# SOW# / Release #: Sample Custodian: LvLI Batch #: NOTE: EXPLAIN ALL DISCREPANCIES Airbill#792 Samples Hand Delivered or Shipped Comments U No □ No Scala Custody seals on coolers or shipping container intact, signed and dated? 3. Outside of coolers or shipping containers are Z Yes D No free from damage? 4. All expected paperwork received (coc and 1 Yes other client specific information) sealed in plastic bag and easily accessible? Cooler # ERC-99-062 °C Temp 5. Samples received cooled or ambient? Custody seals on sample containers intact, ☐ No Scals □ No signed and dated? 7. coc signed and dated? □ No Sample containers are intact? All samples on coc received? All samples □ No received on coc? 10. All sample label information matches coc? □ No 11. Samples properly preserved? □ No 12. Samples received within hold times? El Yes □ No Short holds taken to wet lab? 13. VOA, TOC, TOX free of headspace? ☐ Yes □ No Z NA 14. QC stickers placed on bottles designated by □ No client? 15. Shipment meets LvLI Sample Acceptance □ No Policy? (Identify all bottles not within policy. See reverse side for policy) Project Manager contacted concerning ☐ Yes □ No Z No discrepancies? name/date (or samples Discrepancies outside criteria)



DATE RECEIVED: 03/22/06

LVL LOT #

CLIENT ID	rar #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J 11J28	001	W	06LE0225	03/20/06	03/23/06	03/28/06
J11J28	001 MS	W	06LE0225	03/20/06	03/23/06	03/28/06
J11 J2 8	001 MSD	W	06LE0225	03/20/06	03/23/06	03/28/06
LAB QC:						
						
PBLKDW	MB1	W	06LE0225	N/A	03/23/06	03/28/06
PBLKDW	MB1 BS	W	06LE0225	N/A	03/23/06	03/28/06
PBLKDW	MB1 BSD	W	06LE0225	N/A	03/23/06	03/28/06

August 1 february 1 fe

A-1.11

 $(\frac{1}{2} e^{-i \theta T}) = (\Gamma^{0} + i \theta) + (\overline{\theta}) = (e^{i \theta} \chi_{AB})$

•

1.11.1 2.11.1

Service Control of the Control of th



Case Narrative

Client: TNU-HANFORD RC-048

LVL #: 0603L574

SDG/SAF # K0263/RC-048

W.O. #: 11343-606-001-9999-00

Date Received: 03-22-2006

PCB

One (1) water sample was collected on 03-20-2006.

The sample and its associated QC samples were extracted on 03-23-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 03-28-2006. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8082.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
- 2. The sample was extracted and analyzed within required holding time.
- 3. The sample and its associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
- 4. The method blank was below the reporting limits for all target compounds.
- 5. All surrogate recoveries were within acceptance criteria.
- 6. All blank spike recoveries were within acceptance criteria.
- 7. The matrix spike recoveries were within acceptance criteria.
- 8. The initial calibrations associated with this data set were within acceptance criteria.
- 9. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 9 pages.



- 10. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
- 11. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Inin Daniels

Laboratory Manager

Lionville Laboratory Incorporated

som\r:\group\data\pest\tnu hanford\0603-574s.pcbs



GLOSSARY OF DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.
- . I = Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- NS = Not Spiked.
- SP = Indicates Spiked Compound.
- This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- This flag applies to a compound that has been confirmed by GC/MS.
- NPM = No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.

RFW Batch Nu	mber: 0603L574	Client:	TNUHA	PCI NFORD RC	3s by - 048 1		rk	Order: 1134	360			04/08/06 10 —	0:0
	Cust ID:	J11J28	3	J11J28	3	<i>J</i> 11J28	1	PBLKDW		PBLKDW BS		PBLKDW BSI	D
Sample Information Surrogate: T ===================================	RFW#: Matrix: D.F.: Units:	001 WATER 1.0 UG/I	00	001 MS WATER 1.0 UG/I	00	001 MSD WATER 1.0 UG/L	0	06LE0225-1 WATER 1.0 UG/I	0	06LE0225-M WATER 1.0 UG/I	0	06LE0225-1 WATER 1.0 UG/I	00
Surrogate:	Tetrachloro-m-xylene Decachlorobiphenyl	112 89	% % 	104 88	% % :=fl=:	104 89	% % =fl-	120 122	8	113 98	8	100 98	8
Aroclor-1221 Aroclor-1232 Aroclor-1242 Aroclor-1248		0.40 0.40 0.40 0.40 0.40 0.40	ם ם ם ם	112 0.40 0.40 0.40 0.40 0.40	ម ប ប	112 0.40 0.40 0.40 0.40 0.40	* U U	0.40 0.40 0.40 0.40 0.40 0.40	#11 U U U U U U U U U U U U U U U U U U U	115 0.40 0.40 0.40 0.40 0.40	:=f1 v v v v v	106 0.40 0.40 0.40 0.40 0.40	ช บ บ บ

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Lionville Labo	orator	y Use Only	Custo	ody T	rar	ısf	er	Rec	ord/l	Lab	Wc	rk	Re	qu	ies	t P	age_	of	<u> </u>	_			IVL
06030	.5	74		-				COMP				D AR								e 🧦	SRÇ		ē d
				. 0 -			E- E	Refriger	etor #	 	1.	15	12	(G) 11		 :		<u> </u>		<u> </u>	 		2
Client 7//	- H	<u>ANFORD</u>	5AF#	RC-0	48		£	- Hollinger		Liquid		G	G	C	-	:	 	P		P	 		2
Est. Final Proj	. Sam	pling Date	<u> </u>					#/Type (Contelner	Solid			1				-	\	1		}		2 2
Project #	1139	13-606.	-001-999	9-00			·· ·	-		Liquid	 	-1	1	L		<u> </u>	 	500		625	 -		
Project Conta	ct/Pho	xne #	iger <u>OJ</u>	· · · · · · · · · · · · · · · · · · ·		-		Volume	•	Solid		. = .	-	-)]				
Lionville Labo	ratory	Project Mana	iger <u>OJ</u>	- 3.0	- · ·		 -	Preserve	stives	- 12.5		-	 _ 					HN3	A	A1504	 		
ac <u>Spec</u>	<u> </u>	el <u>St<i>zl</i></u>	TAT3	poary				_		. ,		ORC	ANIC	1 				INC	PIG	wer			1
ſ			Date Due	_				ANALYS REQUES			ð	¥ Ma	Pest/	23		.3-		Metal	8	W3			
MATRIX	Γ	T				<u> </u>			T					1		Llon	ville La	borato	ry Use	Only		1	
S - Soil SE - Sediment SO - Soild SL - Sludge	Lab ID		Cilent ID/Descri	ption ,		Chi (4	ntrix IC osen V)	Matrix	Date Collected	Time Collected		OURSH	0608H	OFEE				CESTATION	;	IN3/12			
W Water O - Oil		→	- M-:	er Tellan I anna	ال المراد		MSD		Turne la C	14214 - 1	٠ . ٢ - ١٠٠	- 2			3700 _{7 1}	• 11 Jugan		1.11		+	 		
A - Air D8 - Drum	001	111	<u> </u>		3	<i>V</i>		W	70-70-	1/02	- 1	3	3	-	# 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					 	\vdash	-	
Solids DL - Drum						`~-'3	₹	1.3 h . 4	1 THE STATE OF THE		3	* £2000 18	\$ 00 \$ 20	3.2.2.			<u> </u>	· ·		 	\vdash		
Liquids							:	E	1 m			12.0	1,-2	• .		-				↓			
Leachate WI - Wipe	\				•							- ř ,							<u> </u>	<u> </u>	\vdash		
X - Other F - Fish			-	<u>- ' </u>								er G		- A - B					ļ	ļ'			
1 - (191)			•	,				"" ""			:	3 - 30 - 5	•	5	ر:۰۰۰					<u> </u>			
	L	*;						-		9 A. 76					- 3								
											2		100,000	,	7			- T					
						12 PT					2 d	Jan "		4.2	Ţ.,								
			-	er : Ese				2.3	***	1.19	100				.196° - '	11.		•					<u> </u>
Special Instruc	tions:		····				DATI	E/REVISIO							•								
, '		150 , 10	. 4	<i>م</i>	_		_		. 1		OF	CR	R			·						-	
METACE	リニ	HOLD DI	1,15, LI, M	OP, Si	,54,			<u>.</u>	. 2		00	18	HV		<u>. </u>	-							
		Sn, ll							3														
			•						. 4					:									
									. 5												 		
			· · · · · · · · · · · · · · · · · · ·			<u></u>			. 6														
Relinquished	ď	Received by	Date	Time			uished Y	'	Received by	'	Date	Tie	ys ė	. F	lelinqui by	shed			elved by		Date	Tim	e
1-(17	-	r/1 0	36.77				<u> </u>					1	\dashv				十			O.	RIGIN	101	7
1.42		/ sems	3/2/06	490			<u>.</u>					+		-	U								
1	Ì	V						<u> </u>				<u> </u>			<u> W</u>	<u>ASTE</u>	4			Kt	WRIT	<u>川に</u>	4

Washington Clos	ure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST RC-048-367 Page											Page 1	of <u>2</u>
Collector DUPLIER F. M. HALL		C		v Contact KESSNER	Telephor 375-46				Project (KESSNE	cordinator R, JH	Pric	ce Code	7N		rnaround
Project Designation 100 Area and 300 Area Co	mponent of the RCBRA		amplic 1-991	ng Location N-26	•				SAF.No. RC-048		Air	Quality		45	Days 🖁
Ice Chest No. ERC -	99-062	F	ield Lo EL-1	ogbook No. 592		COA BESRA	S6520		Method o	f Shipment X	7				9999
Shipped To EBERLINE SERVICES /	IONVILLE	O)ffsite	Property No. AU	06033	38			Bill of L SEE O	eding/Air Bil SPC	ll No.				Ø
POSSIBLE SAMPLE HAZ	ARDS/REMARKS														
POTENTIAL RADIOACTIV	E < DOT LIMITS			Preservation	Neac	HN03 to p <2	4	HN03 ₩		3 to pHi HNO3 -2 <2		HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C
Special Handling and/or	Storage	•		Type of Container	P	G/P	G/P	G/f		G/P, G/		G/P	aG	aG	вG
Cool 4°C				No. of Container(s)	, ,	1	,	1		1 1		<u> </u>	3	2	3
				Volume	125ml.	1000mL	. 1000mL	1000r	mL 100	. 1000)mL	500mL	I000mL	1000mL	1000mL
	SAMPLE ANA	ALYSIS			Tritiem - H3	See item (1) Special Issurvetion	19,90 Total	Leotop Thorium (Thorium	m Ura (Un 233 Urania	opic Radium alum 234, ss-235, ss-236)		See item (2) is Special (astructions.	Semi-VOA - B270A (TCL)	PCB1 - 8082	Pesticides - 8081
Sample No.	Matrix *	Sample I	Date	Sample Time										201	
J11J28	WATER	MAR 2 U	200	8 1102								Х	Х	X	Χ
						<u> </u>			_						
			•			<u> </u>		 		<u> </u>	\dashv				
						<u> </u>					-				
CHAIN OF POSSESSI	ION	Sign/	Print N	Vames	<u> </u>	SPI	CIAL INSTR	UCTIO	NS				<u> </u>		Matrix *
Relinquisher By Responding	20 州市 12.	SO Received By		In word De	ite/Time /25	0 (I)	Gалин Spec - (Full List)	Americium	-241, Antimony	-125, Be	eryllium-7, C	sium-134, Cas	siun-137,	3=9vil 5E#Sedistent
Relinquished By/Remoyed From	Date/Time	Received By	y/Stored	In Da	te/Time	Un	balt-60, Europiun minro-238} ICP Metala - 60								S0=Schid Si=Skulpe W = Water
SIGDCE AND 32 Relinquished ByrRemoved From	006 /350 Date/Time	Received By		32006 /3.	te/Time 07	C	imium, Calcium, lybdonum, Nicke	Chromius	n, Cobakt, Co	opper, Iron, Lea	đ, Lithiu	ım, Magnesiu	л. Мапралско		O=Oil A=Air
3728 # 2A 321		te Form		R. Romande		OG Tin	, Uranium, Vanac	ium Zin	:); Mercury	- 7470 - (CV)	MICON, 2	Miner, 20diáu	n, Stronkium, T	nakum.	DS=Drum Solids DL=Drum ப்புமன்
Relinquished By/Removed From			•		te/Time										T=Tissue WI=Wips
C. Edmundon R. Da	Date/Time	FED	w/Seneral	tn - Da	te/Time										Letaquid Ve Vegetation
Relimibished Bystemoved From	०६२० ४ वेस्ट्री	Receipte	esse	and 3.22-0		Per Per	sonnel not ava inquish sample	ulabie to	730						X=Other
Retinquished By/Removed From	Date/Time	Received By	y/Stored	Da 🗸 Da	ue/Time	Re	f# <u>2A on 3</u>	1 <u>2//</u>	126						
LABORATORY Received SECTION	Ву	······································			Tiel	e			•				D:	ate/Time	<u> </u>
FINAL SAMPLE Disposal I	Method	· · · · · · · · · · · · · · · · · · ·	٠				Dispo	sed By					D	ate/Time	
	72MLARI			·			гизро	ect by			·	•	U.	ate/Lime	

Washington Clos	sure Hanford	C	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST RC-048-367 Puge 2										Page 2	of 2	
Collector DAFFAR			any Contact AN KESSNER	Telepho 375-4					oiect Coordi SSNER, JH	nator	Price Co	ođe	7N		rnaround _∞
Project Designation 100 Area and 300 Area C	omponent of the RCBRA		line Location -N-26					SAI	F No. -048		Air Qu	ality		45	Days
Ice Chest No. ERC-	99-062		Logbook No. 1592		COA BESR	AS6520	_		ibed of Shir ED EX	ment					900
Shioped To EBERLINE SERVICES	LIÓNVILLE	Offsite	Property No. AO	6033	8				I of Lading SEE OSPC	Air Bill	No.				S
POSSIBLE SAMPLE HA	ZARDS/REMARKS]												
POTENTIAL RADIOACTIV	E < DOT LIMITS		Preservation	Cool 4C	H2504 (ı ic			ļ						
Special Handling and/o	r Storage		Type of Container	P	Q/I				•				ļ		
cool 40C	_		No. of Container(s)	1	1					L			ļ i		
C001 F.C			Volume	125mL	125n	nL _									
			<u> </u>	See item (1) in Special Instructions.	NO2/N 353.										
	SAMPLE ANA	LYSIS										-			
Sample No.	Matrix *	Sample Date	Sample Time									100			
J11J28	WATER	MAR 2 U 21	M6 1107		X						# TE 1		7.5	ATI SIMBLY	Section even
				<u> </u>	ļ										
OTA IN AN MOCORDO	101 4	Si (D.)-	N	<u> </u>	<u> </u>				<u> </u>						
CHAIN OF POSSESS Reli CATA WE PROMISE F. M. HALL MAR	Date/Time 125	Sign/Print O Received By/Ston	ed la weff D	ate/Time			NSTRUCTIO								Matrix *
·					SD (1) IC Anion	s - 300.0 (Bron	nide, C	hloride, Fluori	de, Nitrate	, Nitrite, Pl	xosphate	s, Sulfate)		S=Suil SE=Suliment SO=Sulul
Retinquished By/Removed From	Date/Time 3 <i>2006_1350</i>	Received By/Stor		hate/Time /35d	[٠					SieSindge W = Water
Retinquished By/Removed From	Date/Time	Received By/Ston		ate/Time 09								:			O=Oil A=Air DS=Drum Suisis
3728 # 2A 3-2 Retinquished By/Removed From	1-06 0900 WCH Date/Time 15	6 & Received By/Ston	son IK Blacerolden rei in D	<i>- 27-کل س</i> (ate/Time	06										DL=Drupt Liquids T=Titus:
K. Edmundson I	R. Slauden 3-21		ex												W(=Wy< L=Lyud
Relinquished By/Removed From	Date/Time	Received By/Ston	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	hate/Time 26 092	P L	ersonnel n	ot available t amples from	0 3729							V=Vegitures
Relinquished By/Removed From	Date/Time	Received By/Ston		ate/Time		relinquish a Ref # 214 o	on <u>3 / 2/ /</u>	06							
LABORATORY Received	1 By			Ti	tie					 			D	ale/Time	<u>l</u>
FINAL SAMPLE Disposal DISPOSITION	Method						Disposed By						Đ	ale/Time	

Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU-HANFORD Date: 3/22/06 Purchase Order / Project# / SAF# SOW# / Release #: Sample Custodian: LyLI Batch #: 0603257 NOTE: EXPLAIN ALL DISCREPANCIES Airbill#792048034460 Samples Hand Delivered or Shipped 2. Custody seals on coolers or shipping Comments ☐ No Seals container intact, signed and dated? 3. Outside of coolers or shipping containers are □ No free from damage? 4. All expected paperwork received (coc and ∕£Yes □ No other client specific information) sealed in plastic bag and easily accessible? Cooler # ERC-99-062 °C Temp Samples received cooled or ambient? 6. Custody seals on sample containers intact, □ No ☐ No Seals signed and dated? 7. coc signed and dated? Sample containers are intact? □ № All samples on coc received? All samples ☐ No received on coc? 10. All sample label information matches coc? 1 Yes □ No 11. Samples properly preserved? ĊΎcs □ No 12. Samples received within hold times? **D**Yes □ No Short holds taken to wet lah? 13. VOA, TOC, TOX free of headspace? Ø N/A 14. QC stickers placed on bottles designated by D No client? 15. Shipment meets LvLI Sample Acceptance □ No Policy? (Identify all bottles not within policy. See reverse side for policy) 16. Project Manager contacted concerning ☐ Yes □ No discrepancies? name/date (or samples Discrepancies outside criteria)

DATE RECEIVED: 03/22/06

LVL LOT # :0603

CLIENT ID /ANALYSIS	TAT #	мтх 	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11J28						
SILVER, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06
SILVER, TOTAL	001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
SILVER, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
ALUMINUM, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06
ALUMINUM, TOTAL	001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
ALUMINUM, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
ARSENIC, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06
ARSENIC, TOTAL	001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
ARSENIC, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
BORON, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06
BORON, TOTAL	001 REP	M	06L0195	03/20/06	03/30/06	04/03/06
BORON, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
BARIUM, TOTAL	001	M	06L0195	03/20/06	03/30/06	04/03/06
BARIUM, TOTAL	001 REP	M	06L0195	03/20/06	03/30/06	04/03/06
BARIUM, TOTAL	001 MS	M	06L0195	03/20/06	03/30/06	04/03/06
BERYLLIUM, TOTAL	001	M	06L0195	03/20/06	03/30/06	04/03/06
BERYLLIUM, TOTAL	001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
BERYLLIUM, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
BISMUTH, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06
BISMUTH, TOTAL REP	001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
BISMUTH, TOTAL SPIKE	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
CALCIUM, TOTAL	001 001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
CALCIUM, TOTAL		W	06L0195	03/20/06	03/30/06	04/03/06
CALCIUM, TOTAL	001 MS 001	W W	06L0195	03/20/06 03/20/06	03/30/06 03/30/06	04/03/06 04/03/06
CADMIUM, TOTAL CADMIUM, TOTAL	001 001 REP	W	06L0195 06L0195	03/20/06	03/30/06	04/03/06
CADMIUM, TOTAL CADMIUM, TOTAL	001 KEP	W	06L0195	03/20/06	03/30/06	04/03/06
COBALT, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
COBALT, TOTAL	001 001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
COBALT, TOTAL	001 KEP	W	06L0195	03/20/06	03/30/06	04/03/06
CHROMIUM, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
CHROMIUM, TOTAL	001 001 REP	W.	06L0195	03/20/06	03/30/06	04/03/06
CHROMIUM, TOTAL	001 KEF	W	06L0195	03/20/06	03/30/06	04/03/06
COPPER, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
COPPER, TOTAL	001 001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
COFFER, TOTAL	JUI REF	п	20110172	03/20/00	03/30/00	04/03/00

DATE RECEIVED: 03/22/06 LVL LOT # :0603L574

CLIENT ID /ANALYSIS	LVL #	мтх	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
IRON, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06
IRON, TOTAL	001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
IRON, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
MERCURY, TOTAL	001	W	06C0057	03/20/06	03/29/06	03/30/06
MERCURY, TOTAL	001 REP	W	06C0057	03/20/06	03/29/06	03/30/06
MERCURY, TOTAL	001 MS	W	06C0057	03/20/06	03/29/06	03/30/06
POTASSIUM, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06
POTASSIUM, TOTAL	001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
POTASSIUM, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
LITHIUM, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06
LITHIUM, TOTAL	001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
LITHIUM, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
MAGNESIUM, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06
MAGNESIUM, TOTAL	001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
MAGNESIUM, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
MANGANESE, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06
MANGANESE, TOTAL	001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
MANGANESE, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
MOLYBDENUM, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06
MOLYBDENUM, TOTAL	001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
MOLYBDENUM, TOTAL	001 MS	W	06Ь0195	03/20/06	03/30/06	04/03/06
SODIUM, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06
SODIUM, TOTAL	001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
SODIUM, TOTAL	0 01 MS	W	06L0195	03/20/06	03/30/06	04/03/06
NICKEL, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06
NICKEL, TOTAL	001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
NICKEL, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
PHOSPHORUS, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06
PHOSPHORUS, TOTAL	001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
PHOSPHORUS, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
LEAD, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06
LEAD, TOTAL	001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
LEAD, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
ANTIMONY, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06
ANTIMONY, TOTAL	001 REP	W	06L0195	03/20/06	03/30/06	04/03/06
ANTIMONY, TOTAL	001 MS	W	06L0195	03/20/06	03/30/06	04/03/06
SELENIUM, TOTAL	001	W	06L0195	03/20/06	03/30/06	04/03/06

~~~~~

DATE RECEIVED: 03/22/06 LVL LOT # :0603L574

| CLIENT ID /ANALYSIS | LVL # | MTX  | PREP #  | COLLECTION | EXTR/PREP | ANALYSIS |
|---------------------|-------|------|---------|------------|-----------|----------|
| SELENIUM, TOTAL     | 001 R | EP W | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| SELENIUM, TOTAL     | 001 M | IS W | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| SILICON, TOTAL      | 001   | М    | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| SILICON, TOTAL      | 001 R | EP W | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| SILICON, TOTAL      | 001 M | is w | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| TIN, TOTAL          | 001   | W    | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| TIN, TOTAL          | 001 R | EP W | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| TIN, TOTAL          | 001 M | is w | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| STRONTIUM, TOTAL    | 001   | W    | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| STRONTIUM, TOTAL    | 001 R | EP W | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| STRONTIUM, TOTAL    | 001 M | is w | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| THALLIUM, TOTAL     | 001   | W    | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| THALLIUM, TOTAL     | 001 R | EP W | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| THALLIUM, TOTAL     | 001 M | is w | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| URANIUM, TOTAL      | 001   | W    | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| URANIUM, TOTAL      | 001 R | EP W | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| URANIUM, TOTAL      | 001 M | is w | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| VANADIUM, TOTAL     | 001   | W    | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| VANADIUM, TOTAL     | 001 R | EP W | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| VANADIUM, TOTAL     | 001 M | is w | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| ZINC, TOTAL         | 001   | W    | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| ZINC, TOTAL         | 001 R | EP W | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |
| ZINC, TOTAL         | 001 M | is w | 06L0195 | 03/20/06   | 03/30/06  | 04/03/06 |

LAB QC:

| SILVER LABORATORY    | LC1 | BS | W | 06L0195 | N/A | 03/30/06 | 04/03/06 |
|----------------------|-----|----|---|---------|-----|----------|----------|
| SILVER, TOTAL        | MB1 |    | W | 06L0195 | N/A | 03/30/06 | 04/03/06 |
| ALUMINUM LABORTORY   | LC1 | BS | W | 06L0195 | N/A | 03/30/06 | 04/03/06 |
| ALUMINUM, TOTAL      | MB1 |    | W | 06L0195 | N/A | 03/30/06 | 04/03/06 |
| ARSENIC LABORATORY   | LC1 | BS | W | 06L0195 | N/A | 03/30/06 | 04/03/06 |
| ARSENIC, TOTAL       | MBl |    | W | 06L0195 | N/A | 03/30/06 | 04/03/06 |
| BORON LABORATORY     | LC1 | BS | W | 06L0195 | N/A | 03/30/06 | 04/03/06 |
| BORON, TOTAL         | MB1 |    | W | 06L0195 | N/A | 03/30/06 | 04/03/06 |
| BARIUM LABORATORY    | LC1 | BS | W | 06L0195 | N/A | 03/30/06 | 04/03/06 |
| BARIUM, TOTAL        | MB1 |    | W | 06L0195 | N/A | 03/30/06 | 04/03/06 |
| BERYLLIUM LABORATORY | LC1 | BS | W | 06L0195 | N/A | 03/30/06 | 04/03/06 |
| BERYLLIUM, TOTAL     | MB1 |    | W | 06L0195 | N/A | 03/30/06 | 04/03/06 |

DATE RECEIVED: 03/22/06 LVL LOT # :0603L574

| CLIENT ID /ANALYSIS  | ΓΛΓ | #  | MTX | PREP #           | COLLECTION | EXTR/PREP | ANALYSIS |
|----------------------|-----|----|-----|------------------|------------|-----------|----------|
| BISMUTH, LCS         | LC1 | BS |     | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| BISMUTH, TOTAL       | MB1 | _  | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| CALCIUM LABORATORY   | LC1 | BS | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| CALCIUM, TOTAL       | MB1 |    | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| CADMIUM LABORATORY   | LC1 | BS | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| CADMIUM, TOTAL       | MB1 |    | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| COBALT LABORATORY    | LC1 | BS | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| COBALT, TOTAL        | MB1 |    | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| CHROMIUM LABORATORY  | LC1 | BS | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| CHROMIUM, TOTAL      | MB1 |    | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| COPPER LABORATORY    | LC1 | BS | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| COPPER, TOTAL        | MB1 |    | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| IRON LABORATORY      | LC1 | BS | M   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| IRON, TOTAL          | MB1 |    | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| MERCURY LABORATORY   | LC1 | BS | W   | 06C0057          | N/A        | 03/29/06  | 03/30/06 |
| MERCURY, TOTAL       | MB1 |    | W   | 06C0057          | N/A        | 03/29/06  | 03/30/06 |
| MERCURY, TCLP LEACHA | MB2 |    | W   | 06C0057          | N/A        | 03/29/06  | 03/30/06 |
| POTASSIUM LABORATORY | LC1 | BS | W   | 0 <b>6L019</b> 5 | N/A        | 03/30/06  | 04/03/06 |
| FOTASSIUM, TOTAL     | MB1 |    | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| LITHIUM LABORATORY   | LC1 | BS | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| LITHIUM, TOTAL       | MB1 |    | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| MAGNESIUM LABORATORY | LC1 | BS | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| MAGNESIUM, TOTAL     | MB1 |    | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| MANGANESE LABORATORY | LC1 | BS | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| MANGANESE, TOTAL     | MB1 |    | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| MOLYBDENUM LABORATOR | LC1 | BS | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| MOLYBDENUM, TOTAL    | MB1 |    | W   | 06L0195          | A/N        | 03/30/06  | 04/03/06 |
| SODIUM LABORATORY    | LC1 | BS | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| SODIUM, TOTAL        | MB1 |    | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| NICKEL LABORATORY    | LC1 | BS | M   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| NICKEL, TOTAL        | MB1 |    | M   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| PHOSPHORUS LCS       | LC1 | BS | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| PHOSPHORUS, TOTAL    | MB1 |    | M   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| LEAD LABORATORY      | LC1 | BS | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| LEAD, TOTAL          | MBl |    | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| ANTIMONY LABORATORY  | LC1 | BS | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| ANTIMONY, TOTAL      | MB1 |    | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |
| SELENIUM LABORATORY  | LC1 | BS | W   | 06L0195          | N/A        | 03/30/06  | 04/03/06 |

DATE RECEIVED: 03/22/06

LVL LOT # :0603L574

| CLIENT ID /ANALYSIS                          | LVL #  | MTX | PREP #  | COLLECTION | EXTR/PREP | ANALYSIS    |
|----------------------------------------------|--------|-----|---------|------------|-----------|-------------|
| <u>,                                    </u> |        |     |         | -          |           | <del></del> |
| SELENIUM, TOTAL                              | MB1    | W   | 06L0195 | N/A        | 03/30/06  | 04/03/06    |
| SILICON LABORATORY                           | LC1 BS | W   | 06L0195 | N/A        | 03/30/06  | 04/03/06    |
| SILICON, TOTAL                               | MB1    | W   | 06L0195 | N/A        | 03/30/06  | 04/03/06    |
| TIN LABORATORY                               | LC1 BS | W   | 06L0195 | N/A        | 03/30/06  | 04/03/06    |
| TIN, TOTAL                                   | MB1    | W   | 06L0195 | N/A        | 03/30/06  | 04/03/06    |
| STRONTIUM LCS STANDA                         | LC1 BS | W   | 06L0195 | N/A        | 03/30/06  | 04/03/06    |
| STRONTIUM, TOTAL                             | MB1    | W   | 06L0195 | N/A        | 03/30/06  | 04/03/06    |
| THALLIUM LABORATORY                          | LC1 BS | W   | 06L0195 | N/A        | 03/30/06  | 04/03/06    |
| THALLIUM, TOTAL                              | MB1    | W   | 06L0195 | N/A        | 03/30/06  | 04/03/06    |
| URANIUM LABORATORY                           | LC1 BS | W   | 06L0195 | N/A        | 03/30/06  | 04/03/06    |
| URANIUM, TOTAL                               | MB1    | W   | 06L0195 | N/A        | 03/30/06  | 04/03/06    |
| VANADIUM LABORATORY                          | LC1 BS | W   | 06L0195 | N/A        | 03/30/06  | 04/03/06    |
| VANADIUM, TOTAL                              | MB1    | W   | 06L0195 | N/A        | 03/30/06  | 04/03/06    |
| ZINC LABORATORY                              | LC1 BS | W   | 06L0195 | N/A        | 03/30/06  | 04/03/06    |
| ZINC, TOTAL                                  | MB1    | W   | 06L0195 | N/A        | 03/30/06  | 04/03/06    |



**Analytical Report** 

Client: TNU-HANFORD RC-048

LVL#: 0603L574

SDG/SAF#: K0263/RC-048

W.O.#: 11343-606-001-9999-00

Date Received: 03-22-06

#### METALS CASE NARRATIVE

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvLI) certifies that all test results meet the requirements of NELAC except as noted below.

- 1. This narrative covers the analysis of 1 water sample.
- 2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary. The sample was rerun for Aluminum, Beryllium, Calcium, Iron, Magnesium, Manganese, Potassium, Phosphorous, and Sodium due to high concentrations and sample matrix.
- 3. All analyses were performed within the required holding times.
- 4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
- 5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
- 6. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
- 7. All ICP Interference Check Standards were within control limits
- 8. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.
- 9. The matrix spike (MS) recoveries for 3 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.
- 10. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of pages.

following analytes:

|           |                | $\underline{PDS}$   | <u>PDS</u> |
|-----------|----------------|---------------------|------------|
| Sample ID | <u>Element</u> | Concentration (ppb) | % Recovery |
| J11J28    | Chromium       | 1,100               | 100.1      |
|           | Iron           | 40,000              | 83.2       |
|           | Manganese      | 2,000               | 99.0       |

- The duplicate analyses for 4 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
- 12. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
- 13. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
- 14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

ijw/m03-574

<u>5/1/09</u> Date



## METALS METHOD GLOSSARY

| The following m<br>Lot#: 0603LS7 | ethods are used as ro                | eference for the digest | ion and analysis | of samples  | contained within |
|----------------------------------|--------------------------------------|-------------------------|------------------|-------------|------------------|
|                                  | ure:13101311                         | 1312Other:              |                  | •           |                  |
| •                                |                                      | ysis Methods:ILM        | 03.0 _ILM04.     | 0           |                  |
| Metals Digestion                 | Methods: \(\sum_{3005A}\) Other      | 3010A30153              | 3020A3050B       | 3051        | 200.7SS17        |
|                                  |                                      | Metals Analysis M       | lethods          | • .         | •                |
| •                                |                                      | •                       | •                | EPA         |                  |
|                                  | SW846                                | EPA                     | STD MTD          | OSWR        | USATHAMA         |
|                                  | <b>1 € 6010B</b>                     | 200.7                   |                  |             | 99               |
| Aluminum                         | ₹6010B7041                           |                         |                  |             | 99               |
| Antimony                         | <del>≠</del> 6010B 7060              |                         | 3113B            |             | <u>99</u>        |
| Arsenic                          | £6010B/000<br>≻6010B                 | 200.7                   | <del>_</del>     |             | . <b>99</b>      |
| Barium                           | ₹6010B                               | 200.7                   |                  |             | 99               |
| Beryllium                        | ₹ 6010B,                             | 200.7 '                 |                  | 1620        | <del>99</del>    |
| Bismuth                          | ₹6010B                               | 200.7                   |                  |             | 99               |
| Boron                            | €6010B7131                           |                         |                  |             | 99               |
| Cadmium                          | ₹6010B                               | 200.7                   |                  |             | 99               |
| Calcium                          | €6010B7191                           |                         |                  |             | SS17             |
| Chromium                         | ₹6010B                               | 200.7                   |                  |             | 99               |
| Cobalt                           | ₹6010B _7211                         |                         |                  |             | 99               |
| Copper                           | ₹6010B                               | 200.7                   |                  |             | 99               |
| lron                             | √6010B 7421                          |                         | 3113B            |             | 99               |
| Lead                             | ₹6010B7430                           | <u> </u>                | <del>-</del>     | 1620        | 99               |
| Lithium                          | ₹6010B                               | 200.7                   |                  |             | <b>99</b> .      |
| Magnesium                        | ₹6010B                               | 200.7                   |                  |             | 99               |
| Manganese                        | 1470A 3747                           | ·                       | 1                |             | 99               |
| Mercury                          | ₹6010B                               | 200.7                   |                  |             | 99               |
| Molybdenum                       | ₹6010B                               | 200.7                   |                  |             | 99               |
| Nickel                           | <del></del> <del> √</del> 6010B 7610 | <b></b>                 | 4                |             | 99               |
| Potassium                        | 6010B ,                              | 200.7 '                 |                  | 1620        | <u>99</u>        |
| Rare Earths                      | ₹6010B774                            |                         | 3113B            |             | 99               |
| Selenium                         | ₹6010B ,                             |                         | <b>—</b>         | 1620        | 99               |
| Silicon                          | 6010B                                | 200.7                   |                  | 1620        | 99               |
| Silica                           | <del>√</del> 6010B 776               |                         |                  | <del></del> | 99               |
| Silver                           | ₩ 6010B777                           | ·                       | 4                |             | 99               |
| Sodium                           |                                      | 200.7                   | •                |             | <u>_</u> 99      |
| Strontium                        | <b>№</b> 6010B                       |                         | _200.9           |             | <u>99</u>        |
| Thallium                         | ₹6010B784                            | 200.7                   |                  |             | 99               |
| Tin                              | <b>₹6010B</b>                        |                         | •                |             | <u></u> 99       |
| Titanium                         | 6010B                                | 200.7                   |                  | 1620        | 99               |
| Uranium                          | <b>天</b> 6010B,                      | 200.7 '                 |                  |             |                  |
| Vanadium                         | <b>₹</b> 6010B                       | 200.7                   |                  |             |                  |
| Zinc                             | <u> 1</u> 6010B                      | 200.7                   |                  | 1620        | <u></u>          |
| Zirconium                        | 6010B '                              | 200.7 1                 |                  | 1020        |                  |
|                                  | - LP/                                | ethod: 60/0B            |                  |             |                  |
| Mine Phospho                     | א עטדא M                             | etnod:                  |                  | L-W         | 1-033/M-03/01    |

## METHOD REFERENCES AND DATA QUALIFIERS

### **DATA QUALIFIERS**

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- \* = Indicates that the original sample result is greater than 4x the spike amount added.

#### **ABBREVIATIONS**

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LCS = Laboratory Control Sample.

NC = Not calculated.

#### ANALYTICAL METAL METHODS

- 1. Not included in the method element list.
- 2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).
- 3. Flame AA.
- 4. Graphite Furnace AA.

L-WI-033/N-04/98

#### INORGANICS DATA SUMMARY REPORT 04/28/06

LVL LOT #: 0603L574

CLIENT: TNUHANFORD RC-048 K0263 WORK ORDER: 11343-606-001-9999-00

| WORK ORDE | R: 11343-606-001-9999- | -00                                     |          |       |           |          |
|-----------|------------------------|-----------------------------------------|----------|-------|-----------|----------|
|           |                        |                                         |          |       | reporting | DILUTION |
| SAMPLE    | SITE ID                | ANALYTE                                 | RESULT   | UNITS | LIMIT     | FACTOR   |
|           | ********               | T E E E E E E E E E E E E E E E E E E E | 基准等管理显示样 | ****  | *****     |          |
| -001      | J11 <b>J28</b>         | Silver, Total                           | 0.70 u   | UG/L  | 0.70      | 1.0      |
|           |                        | Aluminum, Total                         | 51.6     | UG/L  | 23.6      | 1.0      |
|           |                        | Arsenic, Total                          | 13.8     | UG/L  | 6.1       | 1.0      |
|           |                        | Boron, Total                            | 43.4     | UG/L  | 2.4       | 1.0      |
|           |                        | Barium, Total                           | 65.8     | UG/L  | 0.20      | 1.0      |
|           |                        | Beryllium, Total                        | 0.31     | ng/r  | 0.20      | 1.0      |
|           |                        | Bismuth, Total                          | 5.1 u    | ng/r  | 5.1       | 1.0      |
|           |                        | Calcium, Total                          | 37300    | UG/L  | 21.9      | 1.0      |
|           |                        | Cadmium, Total                          | 0.83     | UG/L  | 0.70      | 1.0      |
|           |                        | Cobalt, Total                           | 24.6     | UG/L  | 1.4       | 1.0      |
|           |                        | Chromium, Total                         | 1370     | UG/L  | 1.3       | 1.0      |
|           |                        | Copper, Total                           | 90.2     | UG/L  | 1.2       | 1.0      |
|           |                        | Iron, Total                             | 223000   | UG/L  | 5.4       | 1.0      |
|           |                        | Mercury, Total                          | 0.10 u   | UG/L  | 0.10      | 1.0      |
|           |                        | Potassium, Total                        | 4530     | UG/L  | 771       | 1.0      |
|           |                        | Lithium, Total                          | 3.9      | UG/L  | 0.30      | 1.0      |
|           |                        | Magnesium, Total                        | 7850     | UG/L  | 39.1      | 1.0      |
|           |                        | Manganese, Total                        | 1330     | UG/L  | 3.2       | 1.0      |
|           |                        | Molybdenum, Total                       | 29.0     | UG/L  | 2.9       | 1.0      |
|           |                        | Sodium, Total                           | 86100    | UG/L  | 25.1      | 1.0      |
|           |                        | Nickel, Total                           | 665      | UG/L  | 2.4       | 1.0      |
|           |                        | Phosphorus, Total                       | 93.6     | UG/L  | 9.0       | 1.0      |
|           |                        | Lead, Total                             | 3.1 u    | UG/L  | 3.1       | 1.0      |
|           |                        | Antimony, Total                         | 4.4      | UG/L  | 4.4       | 1.0      |
|           |                        | Selenium, Total                         | 4.8      | UG/L  | 4.7       | 1.0      |
|           |                        | Silicon, Total                          | 17500    | UG/L  | 22.7      | 1.0      |
|           |                        | Tin, Total                              | 10.7 u   | UG/L  | 10.7      | 1.0      |
|           |                        | Strontium, Total                        | 171      | UG/L  | 0.10      | 1.0      |
|           |                        | Thallium, Total                         | 7.0 u    | UG/L  | 7.0       | 1.0      |
|           |                        | Uranium, Total                          | 29.4     | UG/L  | 8.8       | 1.0      |
|           |                        | Vanadium, Total                         | 28.7     | UG/L  | 0.90      | 1.0      |
|           |                        | Zinc, Total                             | 12.4     | UG/L  | 1.6       | 1.0      |
|           |                        |                                         |          |       |           |          |

#### INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/28/06

CLIENT: TNUHANFORD RC-048 K0263
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0603L574

|        |             |                        |        |         | RBPORTING | DILUTION |
|--------|-------------|------------------------|--------|---------|-----------|----------|
| SAMPLE | SITE ID     | ANALYTE                | RESULT | UNITS   | LIMIT     | FACTOR   |
| ====×n |             | *22222322455555555     | ****** | >====== |           | ******   |
| BLANK1 | 06L0195-MB1 | Silver, Total          | 0.70 u | UG/L    | 0.70      | 1.0      |
|        |             | Aluminum, Total        | 23.6 u | UG/L    | 23.6      | 1.0      |
|        |             | Arsenic, Total         | 6.1 u  | UG/L    | 6.1       | 1.0      |
|        |             | Boron, Total           | 2.4 u  | UG/L    | 2.4       | 1.0      |
|        |             | Barium, Total          | 0.20 u | UG/L    | 0.20      | 1.0      |
|        |             | Beryllium, Total       | 0.20 u | UG/L    | 0.20      | 1.0      |
|        |             | Bismuth, Total         | 5.1 u  | UG/L    | 5 - 1     | 1.0      |
|        |             | Calcium, Total         | 21.9 u | UG/L    | 21.9      | 1.0      |
|        |             | Cadmium, Total         | 0.70 u | UG/L    | 0.70      | 1.0      |
|        |             | Cobalt, Total          | 1.4 u  | UG/L    | 1.4       | 1.0      |
|        |             | Chromium, Total        | 1.3 u  | UG/L    | 1.3       | 1.0      |
|        |             | Copper, Total          | 1.5    | UG/L    | 1.2       | 1.0      |
|        |             | Iron, Total            | 5.4 u  | UG/L    | 5,4       | 1.0      |
|        |             | Potassium, Total       | 771 u  | UG/L    | 771       | 1.0      |
|        |             | Lithium, Total         | 0.30 և | UG/L    | 0.30      | 1.0      |
|        |             | Magnesium, Total       | 39.1 u | UG/L    | 39.1      | 1.0      |
|        |             | Manganese, Total       | 3.2 u  | UG/L    | 3.2       | 1.0      |
|        |             | Molybdenum, Total      | 2.9 u  | UG/L    | 2.9       | 1.0      |
|        |             | Sodium, Total          | 25.1 u | UG/L    | 25.1      | 1.0      |
|        |             | Nickel, Total          | 2.4 u  | UG/L    | 2.4       | 1.0      |
|        |             | Phosphorus, Total      | 9.0 u  | UG/L    | 9.0       | 1.0      |
|        |             | Lead, Total            | 3.1 u  | UG/L    | 3.1       | 1.0      |
|        |             | Antimony, Total        | 4.4 u  | UG/L    | 4.4       | 1.0      |
|        |             | Selenium, Total        | 4.7 u  | UG/L    | 4.7       | 1.0      |
|        |             | Silicon, Total         | 22.7 u | UG/L    | 22.7      | 1.0      |
|        |             | Tin, Total             | 10.7 u | UG/L    | 10.7      | 1.0      |
|        |             | Strontium, Total       | 0.10 u | UG/L    | 0.10      | 1.0      |
|        |             | Thallium, Total        | 7.0 u  | UG/L    | 7.0       | 1.0      |
|        |             | Uranium, Total         | 8.8 u  | UG/L    | 8.8       | 1.0      |
|        |             | Vanadium, Total        | 0.90 u | UG/L    | D.90      | 1.0      |
|        |             | Zinc, Total            | 1.6 u  | UG/L    | 1.6       | 1.0      |
| BLANKI | 06C0057-MB1 | Mercury, Total         | 0.10 u | UG/L    | 0.10      | 1.0      |
| BLANK2 | 06C0057-MB2 | Mercury, TCLP Leachate | 0.10 u | UG/L    | 0.10      | 1.0      |

#### INORGANICS ACCURACY REPORT 04/28/06

CLIENT: TNUHANFORD RC-048 K0263 LVL LOT #: 0603L574

|        |                |                   | SPIKED | INITIAL | SPIKED |          | DILUTION     |
|--------|----------------|-------------------|--------|---------|--------|----------|--------------|
| SAMPLE | SITE ID        | Analyte           | SAMPLE | RESULT  | TRUONA | *RECOV   | FACTOR (SPK) |
|        | C3222222222222 | ************      |        |         | *****  | ******   | =========    |
| -001   | J11J28         | Silver, Total     | 47.0   | 0.70u   | 50.0   | 94.0     | 1.0          |
|        |                | Aluminum, Total   | 1990   | 51.6    | 2000   | 96.8     | 1.0          |
|        |                | Arsenic, Total    | 1820   | 13.8    | 2000   | 90.5     | 1.0          |
|        |                | Boron, Total      | 996    | 43.4    | 1000   | 95.2     | 1.0          |
|        |                | Barium, Total     | 1910   | 65.8    | 2000   | 92.4     | 1.0          |
|        |                | Beryllium, Total  | 48.4   | 0.31    | 50.0   | 96.2     | 1.0          |
|        |                | Bismuth, Total    | 4780   | 5.1 u   | 5000   | 95.6     | 1.0          |
|        |                | Calcium, Total    | 60800  | 37300   | 25000  | 94.1     | 1.0          |
|        |                | Cadmium, Total    | 52.1   | 0.63    | 50.0   | 102.5    | 1.0          |
|        |                | Cobalt, Total     | 524    | 24.6    | 500    | 100      | 1.0          |
|        |                | Chromium, Total   | 1640   | 1370    | 200    | 134.5*   | 1.0          |
|        |                | Copper, Total     | 316    | 90.2    | 250    | 90.5     | 1.0          |
|        |                | Iron, Total       | 174000 | 223000  | 1000   | ~4900. * | 1.0          |
|        |                | Mercury, Total    | 0.98   | 0.10u   | 1.0    | 98.5     | 1.0          |
|        |                | Potassium, Total  | 28300  | 4530    | 25000  | 95.0     | 1.0          |
|        |                | Lithium, Total    | 1080   | 3.9     | 1000   | 107.7    | 1.0          |
|        |                | Magnesium, Total  | 31700  | 7850    | 25000  | 95.3     | 1.0          |
|        |                | Manganese, Total  | 1560   | 1330    | 500    | 45.5     | 1.0          |
|        |                | Molybdenum, Total | 950    | 28.0    | 1000   | 92.2     | 1.0          |
|        |                | Sodium, Total     | 111000 | 86100   | 25000  | 100.6    | 1.0          |
|        | •              | Nickel, Total     | 1200   | 665     | 500    | 106.2    | 1.0          |
|        |                | Phosphorus, Total | 4660   | 93.6    | 5000   | 91.3     | 1.0          |
|        |                | Lead, Total       | 506    | 3.1 u   | 500    | 101.2    | 1.0          |
|        |                | Antimony, Total   | 474    | 4.4     | 500    | 94.0     | 1.0          |
|        |                | Selenium, Total   | 1550   | 4.8     | 2000   | 77.1     | 1.0          |
|        |                | Silicon, Total    | 18700  | 17500   | 1000   | 117.4*   | 1.0          |
|        |                | Tin, Total        | 1020   | 10.7 u  | 1000   | 101.7    | 1.0          |
|        |                | Strontium, Total  | 1110   | 171     | 1000   | 93.9     | 1.0          |
|        |                | Thallium, Total   | 1990   | 7.0 ц   | 2000   | 99.6     | 1.0          |
|        |                | Uranium, Total    | 2270   | 29.4    | 2500   | 89.7     | 1.0          |
|        |                | Vanadium, Total   | 516    | 28.7    | 500    | 97.4     | 1.0          |
|        |                | Zinc, Total       | 505    | 12.4    | 500    | 98.5     | . 1.0        |

#### INORGANICS PRECISION REPORT 04/28/06

CLIENT: TNUHANFORD RC-048 K0263

LVL LOT #: 0603L574

|         | SK: 11343-606-661-9999- |                        | INITIAL  |           |         | DILUTION            |
|---------|-------------------------|------------------------|----------|-----------|---------|---------------------|
| SAMPLE  | SITE ID                 | ANALYTE                | RESULT   | REPLICATE | RPD     | FACTOR (REP)        |
| ****    |                         | REESBESSESSESSESSESSES | ****     | 222411642 | ******  | <b>自然结本的主要</b> 非常标识 |
| -001REP | J11J28                  | Silver, Total          | 0.70u    | 0.70u     | ИC      | 1.0                 |
|         |                         | Aluminum, Total        | 51.6     | 42.1      | 20.3    | 1.0                 |
|         |                         | Arsenic, Total         | 13.6     | 15.2      | 9.7     | 1.0                 |
|         |                         | Boron, Total           | 43.4     | 41.7      | 4.0     | 1.0                 |
|         |                         | Barium, Total          | 65.8     | 65.6      | 0.30    | 1.0                 |
|         |                         | Beryllium, Total       | 0.31     | 0.25      | 21.4    | 1.0                 |
|         |                         | Bismuth, Total         | 5.1 u    | 5.1 u     | NC      | 1.0                 |
|         |                         | Calcium, Total         | 37300    | 36300     | 2.7     | 1.0                 |
|         |                         | Cadmium, Total         | 0.83     | 0.70u     | AL 36   | 1.0                 |
|         |                         | Cobalt, Total          | 24.6     | 24.7      | 0.41    | 100 No 100 1.0      |
|         |                         | Chromium, Total        | 1370     | 1390      | 1.2     | 1.0                 |
|         |                         | Copper, Total          | 90.2     | 90.7      | 0.55    | 1.0                 |
|         |                         | Iron, Total            | 223000 2 | 24000     | 0.56    | 1.0                 |
|         |                         | Mercury, Total         | 0.10u    | 0.10u     | NC      | 1.0                 |
|         |                         | Potassium, Total       | 4530     | 4190      | 7.7     | 1.0                 |
|         |                         | Lithium, Total         | 3.9      | 4.1       | 5.0     | 1.0                 |
|         |                         | Magnesium, Total       | 7B50     | 7800      | 0.64    | 1.0                 |
|         |                         | Manganese, Total       | 1330     | 1330      | 0.23    | 1.0                 |
|         | •                       | Molybdenum, Total      | 28.0     | 29.6      | 5.6     | 1.0                 |
|         |                         | Sodium, Total          | 86100    | 86500     | 0.54    | 1.0                 |
|         |                         | Nickel, Total          | 665      | 676       | 1.6     | 1.0                 |
|         |                         | Phosphorus, Total      | 93.6     | 89.8      | 4.1     | 1.0                 |
|         |                         | Lead, Total            | 3.1 u    | 3.1 u     | NC      | 1.0                 |
|         |                         | Antimony, Total        | 4.4      | 4.6       | 4.4     | . 2.0 (مالسول)      |
|         |                         | Selenium, Total        | 4.8      | 4.7 u     | المر عد | CONE 100 1.0        |
|         |                         | Silicon, Total         | 17500    | 17500     | 0.45    | 200 mi 4/18/06 1.0  |
|         |                         | Tin, Total             | 10.7 u   | 10.7 u    | NC      | 1.0                 |
|         |                         | Strontium, Total       | 171      | 170       | 0.65    | 1.0                 |
|         |                         | Thallium, Total        | 7.0 u    | 7.0 u     | NC      | 1.0                 |
|         |                         | Uranium, Total         | 29.4     | 34.9      | 17.1    | 1.0                 |
|         |                         | Vanadium, Total        | 28.7     | 28.9      | 0.69    | 1.0                 |
|         |                         | Zinc, Total            | 12.4     | 13.5      | 8.5     | 1.0                 |

#### INORGANICS LABORATORY CONTROL STANDARDS REPORT 04/28/06

**----**

CLIENT: TNUHANFORD RC-048 K0263 LVL LOT #: 0603L574

|        |             |                                        | SPIKED | SPIKED |       |        |
|--------|-------------|----------------------------------------|--------|--------|-------|--------|
| SAMPLE | SITE ID     | ANALYTE                                | SAMPLE | AMOUNT | UNITS | *RECOV |
| ****   |             | ###################################### | ****   |        | ***** | ****   |
| LCS1   | 06L0195-LC1 | Bilver, LCS                            | 495    | 500    | UG/L  | 99.0   |
|        |             | Aluminum, LCS                          | 4930   | 5000   | UG/L  | 90.5   |
|        |             | Arsenic, LCS                           | 9570   | 10000  | UG/L  | 95.7   |
|        |             | Boron, LCS                             | 4820   | 5000   | UG/L  | 96.3   |
|        |             | Barium, LCS                            | 4920   | 5000   | UG/L  | 98.5   |
|        |             | Beryllium, LCS                         | 248    | 250    | UG/L  | 99.1   |
|        |             | Bismuth, LCS                           | 4960   | 5000   | UG/L  | 99.2   |
|        |             | Calcium, LCS                           | 25700  | 25000  | UG/L  | 102.6  |
|        | •           | Cadmium, LCS                           | 241    | 250    | UG/L  | 96.3   |
|        |             | Cobalt, LCS                            | 2450   | 2500   | UG/L  | 97.8   |
|        |             | Chromium, LCS                          | 489    | 500    | UG/L  | 97.8   |
|        |             | Copper, LCS                            | 1240   | 1250   | UG/L  | 98.9   |
|        |             | Iron, LCS                              | 4970   | 5000   | UG/L  | 99.4   |
|        |             | Potassium, LCS                         | 23500  | 25000  | UG/L  | 93.9   |
|        |             | Lithium, LCS                           | 5220   | 5000   | UG/L  | 104.5  |
|        |             | Magnesium, LCS                         | 24200  | 25000  | UG/L  | 96.7   |
|        |             | Mangamene, LCS                         | 746    | 750    | UG/L  | 99.4   |
|        |             | Molybdenum, LCS                        | 4980   | 5000   | UG/L  | 99.5   |
|        |             | Sodium, LCS                            | 23200  | 25000  | UG/L  | 92.8   |
|        |             | Nickel, LCS                            | 1950   | 2000   | UG/L  | 97.3   |
|        |             | Phosphorus, LCS                        | 4810   | 5000   | UG/L  | 96.1   |
|        |             | Lead, LCS                              | 2420   | 2500   | UG/L  | 97.0   |
|        |             | Antimony, LCS                          | 2950   | 3000   | UG/L  | 98.4   |
|        |             | Selenium, LCS                          | 9840   | 10000  | UG/L  | 98.4   |
|        |             | Silicon, LCS                           | 4810   | 5000   | UG/L  | 96.1   |
|        |             | Tin, LCS                               | 4930   | 5000   | UG/L  | 98.6   |
|        |             | Strontium, LCS                         | 4990   | 5000   | UG/L  | 99.8   |
|        |             | Thallium, LCS                          | 9720   | 10000  | UG/L  | 97,2   |
|        |             | Uranium, LCS                           | 2470   | 2500   | UG/L  | 98.6   |
|        |             | Vanadium, LCS                          | 2450   | 2500   | UG/L  | 97.9   |
|        |             | Zinc, LCS                              | 972    | 1000   | UG/L  | 97.2   |
| LCS1   | 05C0057-LC1 | Mercury, LCS                           | 4.9    | 5.0    | UG/L  | 98.8   |

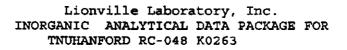
| FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS  See SRC  Client TNUC-HANFORD SAF & Reingerator # 2 2 3 3 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS  SEE SRC  MITTIMU-HANFOLD SAFE RC.049  Final Proj. Sampling Date  Ject J. 343 - COLG - O1 - 999 - 00  Ject Contact/Phone 8  Wolume  Freservative  Freed 3/33/06 Date Due 4/3/06  Freservative  ANALYSES  AREOUSTED  ANALYSES   | ratory      | Use Only Cus                              | tody Tra                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ansf                                                                                                                                                                                                                                                                         | er                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Rec                                      | ord/l                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Lab                                                                                                                                                                                                                                                 | Wo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ork                                                                          | Re                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | eq.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ıes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | t P                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | age_                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | _                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             | V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hent   TNUC   HANFORD   SAF # RC 048   Heirigerator #   2 2 2 3 3 2 3 4 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Print TNUL—HANFOLD SAF IT RC 04 9  Final Proj. Sampling Date  Ject 8 1134/3—CCU-00 1—999—00  Ject Contact/Phone 8  Volums  Volums  Volums  Volums  Sold  Liquid  Liqui | يرسک        |                                           | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | •                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | D AR                                                                         | REAS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        | SRÇ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                             | 1271                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| #/Type Container  #/Type Conta  | Final Proj. Sampling Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | T =                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                     | _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                              | D-F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <del>,</del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | I"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             | _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| at. Final Proj. Sampling Date  #Type Container  Solid  Volume  Volume  Solid  Liquid  Liquid  Liquid  Liquid  Solid  C SOL Del Still TAT 3D Duly  ate Rec'd 3/32/04  Date Due 4/32/04  ATRIX  DESS  Solid  Matrix  OC Chosen  (V)  Matrix  Date  Collected  C  | Final Proj. Sampling Date   Solid      | -HA         | NFORD SAF                                 | #- KC-048                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <u> </u>                                                                                                                                                                                                                                                                     | + 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Hetriger                                 | ator#                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1112                                                                                                                                                                                                                                                | :-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                              | G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <del> </del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <del></del>                                 | +                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| roject # 1/35/3-Cooc-001-9999-80  roject  | Section   Sect   |             | <del></del>                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 4                                                                                                                                                                                                                                                                            | ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | #/Type                                   | Container                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ]                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ,                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| onville Laboratory Project Manager OJ  C SOLL Del Stal TAT 3D Days  alte Hec'd 3/32/OL Date Due 4/31/OL  ATRIX DESS Soli Solid  | TRIX TRIX TRIX TRIX Sold TRIX TRIX TRIX TRIX TRIX TRIX TRIX TRIX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                           | 199-10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | - (                                                                          | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <del> </del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 500                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <del></del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 425                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             | $\dagger$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| ATRIX Soli Sediment Solid Subspace Water  Oil Arr Solid Solid Dum Solids Drum Solids Drum Liquids EP/TCLP Leachaite Wipe Other  | TRIX Self Instructions:  Detail TAT 3DULUS  ANALYSES REQUESTED  AN | ct/Phon     | 0./                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | n /                                                                                                                                                                                                                                                                          | <del></del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Volume                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Solid                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| ANALYSES REQUESTED  ANALYS  | Rec'd 3/32/04 Date Due 4/31/04 REQUESTED N N R R REQUESTED N N R R R R R R R R R R R R R R R R R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ratory i    | Project Manager <u>レン</u>                 | 27 10111                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <u> </u>                                                                                                                                                                                                                                                                     | <del></del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Preserv                                  | ulives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                                                            | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b> </b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | HNY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2534                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             | †                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| ATRIX DOES: Soll - Sedkment - Solid - Sulge - Water - Out - Drum Liquids EP/TCLP Leechate - Wipe - Other Other - Other  | e Rec'd 3/32/OL Date Due 4/31/OL REQUESTED 9 8 8 8 8 7 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 |             |                                           | - Superfix                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                              | <del></del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ANALVE                                   | Ee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ·                                                                                                                                                                                                                                                   | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                              | T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | DRG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | we                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Solid   Soli    | Solf Sudge Value Oil Client ID/Description Oil Chosen (/)  Sold Sudge Value Oil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3/22        | 2/0Cp Date Due                            | 4/21/04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                                                                                                                                                                                                                                   | Š                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 8N<br>N                                                                      | Pest/                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Meta                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | S                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NU3                                                                                                                                                                                    | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Solicis - Oil - Oil - Drum Solicis - Drum Solicis - Drum Liquids EP/TCLP Leechate - Other Other - Othe  | Soll Sediment BD Client ID/Description Chosen (J) Matrix Collected |             |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | T                                                                                                                                                                                                                                                                            | ,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                              | ·,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ı                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Lion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ville L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | borato                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ry Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Only                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                           | _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| - Oil - Air   OOI   TITE   OV   Air   III   OV   Air   III    | Oil Ar 201 11128                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             | Client ID/Des                             | eription .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Che<br>(-                                                                                                                                                                                                                                                                    | IC<br>psen<br>/)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Malrix                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CUASH                                                                        | DUØ8H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | OFEES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NETALS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | W3H                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| - Drum Solids - Drum Liquids EP/TCLP Leechate - Wipe Other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Solids Drum Liquids EP/TCLP Leschate Wipe Other Fish  DATE/REVISIONS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 001         | JIIT28                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                          | 3/20/06                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1102                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 3                                                                            | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1.19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                             | t                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Liquids EP/TCLP Leechate Wipe Other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Liquids EP/TCLP Leachate Wipe Other Fish  DATE/REVISIONS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>LAZI</b> |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                              | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | . • •                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | - <u>-</u>                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                           | t                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| EP/TCLP Leechate Wipe Other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | EP/TCLP Leechate Wipe Other Fish  DATE/REVISIONS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ļ           | A Mayor Line and                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 34                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             | T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Other Figh  DATE/REVISIONS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <del></del> |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | . :                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             | T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Fish                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | eclal Instructions:  DATE/REVISIONS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             |                                           | e e e                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1.50                                                                                                                                                                                                                                                                         | ***                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                          | m):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                     | <u>.</u> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | . i * . * * ·                                                                | Y.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ecial Instructions:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                              | 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1.13                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | . 5                                                                          | - 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | A3., 4.,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             | T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ecial Instructions:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                          | 19.7<br>2 17 17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                     | 1 11.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3.15                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             | T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ecial instructions:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                          | State of Sta |                                                                                                                                                                                                                                                     | 125                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                              | 4 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             | T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ecial instructions:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | rafit ju                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ecial instructions:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1 | Tall Park                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | . (A. /                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | - : -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                           | Γ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| pecial instructions: DATE/REVISIONS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | tions:      | <u> </u>                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                              | DATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | /REVISIO                                 | NS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <u> </u>                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                              | <del></del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <del>'</del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <del></del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             | _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Sn, ll 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <u>.</u>                                 | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             | _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Sn, u                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -           |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                              | <u></u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                          | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                              | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             | _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Sn, U                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |                                           | <del></del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                          | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                     | ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ·                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             | _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Sn, ll                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ,           | Received Oate                             | Time                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                     | Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Tic                                                                          | ne                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | į R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | shed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        | Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Time                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| \$\int_{\text{linguished}} = \frac{3}{4} \\ \tag{8} \\ \ |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | . 1/2       |                                           | 6 1920                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                              | <u> </u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <u> </u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 4D^                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | OR                                                                                                                                                                                     | IGIN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ΔL                                          | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Sn, l()                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | by by Date lime by by by Date lime                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             | 1000 P                                    | - 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                                            | $\dashv$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ·····                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                             | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             | Samp (/34/ . Samp (/34/ . De 3/35  Lab 10 | STY  -HANFORD SAF  Sampling Date  1/34/3-606-001-96  ct/Phone #  ratory Project Manager OJ  Del Stel TAT  3/32/06 Date Due  Lab ID Client ID/Des  No Short S | FIELD PE  L-HANFORD SAF # RC-045  Sampling Date  1/34/3-406-001-9999-00  ct/Phone #  retory Project Manager OJ  Del Stal TAT 3DDays  Lab BD Client ID/Description  Client ID/Description  Client ID/Description  Del HSLH BI, B, Li, Mo, P, Si, S Sn, LL  Received Date Time | FIELD PERSON  S-HANFORD SAF # RC 048  Sampling Date  1/34/3-604-001-9999-00  ct/Phone #  ratory Project Manager OJ  Del Stal TAT 300044  Lab Client ID/Description Ms  OOI 711728  Check C | FIELD PERSONNEL:                         | FIELD PERSONNEL: COMP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | FIELD PERSONNEL: COMPLETE O  LANGER SAFERCOUS  Sempling Date  1/34/3-404-001-9999-00  CityPhone #  ratory Project Manager  Del Stal TAT 3DDAY  ANALYSES REQUESTED  ANALYSES REQUESTED  Client ID/Description  Ms M50  OOI TITTE  DATE/REVISIONS:  1 | FIELD PERSONNEL: COMPLETE ONLY SM  ### ANFORD SAFTE RC 048  Bampling Date #### Wolume    College   College | FIELD PERSONNEL: COMPLETE ONLY SHADE  ##ANFRED SAFTE RC 048   Refrigerator # | FIELD PERSONNEL: COMPLETE ONLY SHADED AR ACC HANFORD SAF # RC 048  Sampling Date 1/34/3-606-00/-9999-00  ct/Phone # ratory Project Manager OJ Del Stal TAT 300045  Client ID/Description  Client ID/Description  Matrix QC Chosen (r)  MS MSD  Date Collected Collected  Collected Collected  Collected Collected  Time Collected Collecte | FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS AC DA AC D | FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS  ACDFGH  A | FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS  ACD FGH  ACD | FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS  ACD FGH  ACD FGH  Refrigerator #  #/Type Conteiner  Solid  CCC  CM  ##Type Conteiner  Solid  CCC  CM  ##Type Conteiner  Solid  CM  ##Type Conteiner  ##Type Co | FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS  ACDFGH  HANFOLD SAF # RC 048  Befrigerator # ACDFGH  Refrigerator # A | FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS  ACD FGH  I MANFOLD SAFT RC 048  Reingurator #  Proper Container  Sold  Color of 1 - 949 9 - 20  INVITATION PROJECT Manager  OUT Dol Stat TAT 3D 2044  Native Color of 1 - 949 9 - 20  Native Color of 1 - 949 9 - 20  ANALYSES  REQUESTED  ANALYSES  REQUESTED  ANALYSES  RECUESTED  ANALYSES  ANALYSES  ANALYSES  ANALYSES  ANALYSES  ANALYSES  ANALYSES  ANALYSES  ANALYS | FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS  AC DIFGH  I MANTORD SAFE RC 048  Sampling Date  (134/3-404-00/-999-00  (1790 Container Solds  Ligad C C C C F F F F F F F F F F F F F F F | FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS  ACDAGH  HANFOLD SAFERCOUS  Sempling Date  #Type Container  Solid  #Type Container  #Type Containe | FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS | FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS  AC DFGH  AC |

| Collector DARKIEN F. M. HM I Project Designation 100 Area and 300 Area Compo Ice Chest No.  ERC - 99 Shipped To EBERLINE SERVICES / LOI |                                                                      | JO Sam<br>Vater Sa i                                               | npany Co<br>OAN KE<br>npling La<br>99-N-26 | ESSNER                                      | Telephor<br>375-46            |                                         |                                                                    |                                                               |                                              | ject Coordii<br>SSNER, JH                                                    | nator                                                | Price Code                                                                                               | 7N                                               | Data Tu                       | rnaround                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------|---------------------------------------------|-------------------------------|-----------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 100 Area and 300 Area Composite Chest No. ERC - 99 Shipped To                                                                           |                                                                      | Vater Sa 1                                                         |                                            | ocation                                     |                               |                                         |                                                                    |                                                               |                                              | 3011224 711                                                                  |                                                      |                                                                                                          |                                                  | _                             |                                                                                                                                               |
| Shipped To                                                                                                                              | 7-062                                                                | Piel                                                               |                                            |                                             |                               |                                         |                                                                    |                                                               |                                              | F No.<br>-048                                                                |                                                      | Air Quality                                                                                              |                                                  | 45                            | Days                                                                                                                                          |
|                                                                                                                                         |                                                                      | Е                                                                  | d Logbo<br>L-1592                          | ook No.                                     |                               | COA<br>BESRAS                           | 6520                                                               |                                                               |                                              | thod of Ship<br>ED EX                                                        | ment                                                 |                                                                                                          |                                                  |                               |                                                                                                                                               |
|                                                                                                                                         | NVILLE)                                                              | Offs                                                               | site Prop                                  | perty No. AC                                | 6033                          | 8                                       |                                                                    |                                                               |                                              | of Lading/<br>SEE OSPC                                                       | Air Bill l                                           | No.                                                                                                      |                                                  |                               |                                                                                                                                               |
| POSSIBLE SAMPLE HAZAR                                                                                                                   | DS/REMARKS                                                           |                                                                    |                                            |                                             |                               |                                         |                                                                    |                                                               |                                              |                                                                              |                                                      |                                                                                                          |                                                  |                               | _                                                                                                                                             |
| POTENTIAL RADIOACTIVE <                                                                                                                 | DOT LIMITS                                                           |                                                                    |                                            | Preservation                                | , None                        | HNO3 to pf                              | ! HNO3 to pH<br><2                                                 | HNO3 4                                                        |                                              | HNO3 to pH<br>⊲2                                                             | HNO3 ta<br><2                                        | pH HNO3 to pH<br>· <2                                                                                    | Cool 4C                                          | Coul 4C                       | Cool 4C                                                                                                                                       |
| Special Handling and/or Sto                                                                                                             | nrage                                                                |                                                                    | Ty                                         | pe of Container                             | P                             | G/P                                     | G/P                                                                | GA                                                            | P                                            | G/P,                                                                         | G/P                                                  | G/P                                                                                                      | яG                                               | аG                            | вG                                                                                                                                            |
|                                                                                                                                         | ~ -Pr                                                                |                                                                    | No.                                        | . of Container(s)                           | 1                             | 1                                       | . 1                                                                | L                                                             |                                              | 1                                                                            | . 1                                                  | L                                                                                                        | 3                                                | 2                             | 3                                                                                                                                             |
| Cool 4°C                                                                                                                                | ÷                                                                    |                                                                    |                                            | Volume                                      | 125mL                         | 1000mL                                  | 1000mL                                                             | 1000                                                          | mL                                           | 1000mL                                                                       | 1000m                                                | L 500mL                                                                                                  | 1000mL                                           | 1000mL                        | 1000mI                                                                                                                                        |
|                                                                                                                                         | SAMPLE ANAI                                                          | .YSIS                                                              | I                                          |                                             | Tritium - H3                  | See item (1)<br>Special<br>Instructions | \$9,30 Total                                                       | laotoj<br>Thoriu<br>(Thorium                                  | uns                                          | laotopie<br>Urashun<br>{Urusian-<br>233/234,<br>Urusian-235,<br>Urasian-236} | Radium -2<br>Ra-228                                  |                                                                                                          | Scani-VOA -<br>8270A (TCL)                       | PCBs - 8082                   | Pesticides<br>8081                                                                                                                            |
| Sample No.                                                                                                                              | Matrix *                                                             | Sample Dat                                                         | te                                         | Sample Time                                 |                               |                                         |                                                                    |                                                               |                                              | Marie i                                                                      |                                                      |                                                                                                          |                                                  |                               |                                                                                                                                               |
| J11J28                                                                                                                                  | WATER                                                                | MAR 20                                                             | 2006                                       | 1102                                        |                               |                                         |                                                                    | -                                                             |                                              |                                                                              | _                                                    | X                                                                                                        | Х                                                | ×                             | X                                                                                                                                             |
|                                                                                                                                         |                                                                      |                                                                    |                                            |                                             |                               |                                         |                                                                    |                                                               |                                              |                                                                              |                                                      |                                                                                                          |                                                  |                               |                                                                                                                                               |
|                                                                                                                                         |                                                                      |                                                                    |                                            |                                             |                               | ,                                       |                                                                    |                                                               |                                              |                                                                              |                                                      |                                                                                                          |                                                  |                               |                                                                                                                                               |
|                                                                                                                                         |                                                                      | ·                                                                  |                                            |                                             |                               |                                         |                                                                    |                                                               |                                              |                                                                              |                                                      |                                                                                                          |                                                  |                               |                                                                                                                                               |
| CHAIN OF POSSESSION                                                                                                                     | ,                                                                    | Ç://b_                                                             | int Nam                                    |                                             |                               |                                         |                                                                    |                                                               |                                              |                                                                              |                                                      |                                                                                                          |                                                  |                               | <br>  3.4.4i =                                                                                                                                |
| Relinquished By/Removed From  SOCO Relinquished By/Removed From  3728 # 28                                                              | Date/Time  25 /350  Date/Time  6 0500  W Date/Time /500  Law 3-21-06 | Received By/S SJ GAL Received By/S Received By/S Received By/S FED | Stored in  Stored in  Stored in  Stored in | Dal 3200<br>Dal 3200<br>Dal Dal Dal Dal Dal | te/Time 50 te/Time 67 te/Time | (1)<br>Coh<br>Ura<br>(2)<br>Cad         | alt-60, Europiuu<br>nium-238)<br>ICP Metals - 60<br>mium, Calcium, | Full List)<br>n-152, Eu<br>LO (Full I<br>Chromiu<br>I, Phosph | (Ameropium<br>Jist) (A<br>M. Cob<br>Jorus, P | n-154, Europiu<br>Aluminum, Ant<br>balt, Copper, Ii<br>Potassium, Sel        | um-155, Pi<br>timony, Ar<br>ron, Lead,<br>enium, Sil | 25, Beryllium-7. (<br>olassium-40, Ruth<br>rsenic, Barium, Be<br>Lithium, Magnesi<br>icon, Silver, Sodiu | enium-106, Ura<br>ryllium, Bismu<br>um, Manganes | nium-235,<br>th, Boron,<br>2, | Matrix *  S=Sull  SE=Sediment  SO=Solid  SI=Studge  W = Water  O=Oil  A#Aur  DS=Drum Sul  IX=Drum Lu  T=Tissue  Wi=Wipe  L=Luqud  V=Vegadinon |
| Relinquished By/Removed From Relinquished By/Removed From                                                                               | Date/Time  Date/Time                                                 | Received By/S                                                      | ino                                        | 3.22.0                                      | te/Time                       | rei<br>Rei                              | inquish sample # 2A on 3                                           | s from :                                                      | 3728                                         |                                                                              |                                                      | =                                                                                                        |                                                  |                               | X=Other                                                                                                                                       |
| LABORATORY Received By SECTION                                                                                                          |                                                                      |                                                                    |                                            |                                             | Tid                           | le .                                    |                                                                    |                                                               |                                              | _                                                                            |                                                      |                                                                                                          | Ţ                                                | ate/Tine                      | ·                                                                                                                                             |
| FINAL SAMPLE Disposal Meth<br>DISPOSITION                                                                                               | ood                                                                  |                                                                    | · · ·                                      |                                             | -                             |                                         | Dispo                                                              | sed By                                                        | <del>-</del>                                 |                                                                              |                                                      |                                                                                                          | ]                                                | Date/Time                     |                                                                                                                                               |

| Washington Closu                                 | Washington Closure Hanford CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST RC-048-367 Page 2 of 2 |              |                       |                         |                                             |                           |                         |             |                                       |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          |                                         |
|--------------------------------------------------|--------------------------------------------------------------------------------------------|--------------|-----------------------|-------------------------|---------------------------------------------|---------------------------|-------------------------|-------------|---------------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|-----------------------------------------|
| Collector DURACE                                 |                                                                                            |              | Compa                 | ny Contact<br>N KESSNER | Telepho:<br>375-4                           | ne No.                    |                         |             | Project Coor<br>KESSNER, Ji           | linator      | Price Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 7N            | Data Tu  | urnaroung                               |
| Project Designation<br>100 Area and 300 Area Cor | npowent of the RCBRA                                                                       | Water Sa     |                       | ne Location<br>N-26     |                                             |                           |                         |             | SAF No.<br>RC-048                     |              | Air Qualit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | y 🗆           | 45       | Days                                    |
| Ice Chest No. ERC-                               | 99-062                                                                                     |              | Field L<br>EL-1       | ozbook No.<br>1592      |                                             | COA<br>BESRAS             | 6520                    |             | Method of Sh<br>FED EX                | ipment       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          |                                         |
| Shipped To<br>EBERLINE SERVICES (                | KONVILLE                                                                                   |              | Offsite               | Property No. AOC        | 6033                                        | 8                         | ·                       |             | Bill of Ladin<br>SEE OSPC             |              | 1 No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |          |                                         |
| POSSIBLE SAMPLE HAZ                              | ARDS/REMARKS                                                                               |              |                       | -                       |                                             |                           |                         |             |                                       |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | T             |          | ]                                       |
| POTENTIAL RADIOACTIVE                            | E < DOT LIMITS                                                                             |              |                       | Preservation            | Cool 4C                                     | H2SO4 to pt<br><2 Cool 40 |                         |             |                                       |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          |                                         |
| Special Handling and/or                          | Storage                                                                                    |              |                       | Type of Container       | P                                           | G/P                       | -                       | ļ           |                                       |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          |                                         |
| Cool 40C                                         |                                                                                            |              |                       | No. of Container(s)     | <u>'</u>                                    | 1                         | <u> </u>                |             |                                       |              | _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |          |                                         |
|                                                  |                                                                                            |              |                       | Volume                  | 125mL                                       | 125mL                     |                         |             |                                       |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               | !        |                                         |
|                                                  | SAMPLE ANA                                                                                 | LYSIS        |                       |                         | See item (1) in<br>Special<br>Instructions. | NO2/NO3 -<br>353.2        |                         |             |                                       |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          |                                         |
| Sample No.                                       | Matrix *                                                                                   | Samp         | le Date               | Sample Time             |                                             |                           |                         |             | <b>3.</b> 1. 7. 1. 1.                 |              | TO BUT A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |               |          |                                         |
| J11J28                                           | WATER                                                                                      | MAR 2        | m¢ טי                 | 16 1107                 |                                             | X                         |                         |             |                                       |              | 100 July 100 |               |          | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
|                                                  |                                                                                            | ļ · · · · ·  | <del>.</del>          |                         |                                             |                           |                         |             |                                       | —            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          |                                         |
|                                                  |                                                                                            |              | ···                   | <del></del>             |                                             |                           | <u> </u>                |             |                                       | -            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               | <u> </u> | <del> </del>                            |
|                                                  |                                                                                            |              |                       |                         |                                             |                           | <del> </del>            | <u> </u>    |                                       |              | <del></del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -             |          | -                                       |
| CHAIN OF POSSESSI                                | ON JOHN                                                                                    | Si           | gn/Print I            |                         |                                             | SPE                       | CIAL INSTR              | RUCTIO      | NS                                    |              | <del>-                                    </del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               | -        | Matrix *                                |
| F. M. HALL MAR                                   | 0 2006                                                                                     | Received SJC | d By/Stored<br>SALE J |                         |                                             | (O)                       | C Anions - 300          | 0.0 (Bromio | le, Chloride, Fluc                    | ride, Nitrat | te, Nitrite, Phosph                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ate, Suifate} |          | S=Soil<br>SE=Sedament                   |
| Relinquished By/Removed From                     | Date/Time                                                                                  | Receive      | d By/Stored           | la Da                   | te/Time                                     |                           |                         |             |                                       |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          | SO≃Solid<br>Si≃Sludge                   |
| 5 JoA LE JAL 3 Relinquished By/Removed From      | 2006 / 350<br>Date/Time                                                                    |              | d By/Stored           | <del></del>             | te/Time 696                                 | 00                        |                         |             |                                       |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          | W ≈ Water<br>O≔Dil<br>A=Arr             |
| 3728 # ZA 3-21                                   |                                                                                            | 72.6         | ounder                | on Il Blander           | 3-21-6                                      | 76                        |                         |             | ,                                     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          | DS≖Drum So<br>DU≖Drum Ca                |
| Retinquished By/Removed From G                   |                                                                                            |              | d By/Slored           | iln Da                  | te/Time                                     |                           |                         |             |                                       |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          | T≊Tissue<br>Wi≃Wipe<br>L≈Laqual         |
| Relinguished By/Romoved From                     | Date/Time                                                                                  | Receive      | By/Stored             | i in / Da               | te/Time                                     | Pers                      | nnel notava             | nilable to  | •                                     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          | V=Vepeluke<br>X=Other                   |
| Relinquished By/Removed From                     | Date/Time                                                                                  |              | d By/Stored           |                         | 6 092\<br>te/Time                           | nelia                     | quish sample<br>24 on 3 | es from 3'  | 728<br>? <b>G</b>                     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |          |                                         |
| LABORATORY Received B                            | ly                                                                                         |              |                       |                         | Tid                                         |                           |                         | · , , • •   | · · · · · · · · · · · · · · · · · · · | ····         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | D             | atc/Time | <u> </u>                                |
| FINAL SAMPLE Disposal M<br>DISPOSITION           | lethod                                                                                     |              |                       |                         |                                             | <del></del>               | Dispo                   | sed By      |                                       |              | <del></del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | D             | ate/Time |                                         |
| BUIES 014 (08/00/00/05)                          |                                                                                            |              |                       |                         |                                             | ·                         |                         |             |                                       |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | •             |          | <del></del>                             |

## Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU-HANFORD Date: 3/22/06 Purchase Order / Project# / SAF#) SOW# / Release #: Sample Custodian: LvLI Batch #: NOTE: EXPLAIN ALL DISCREPANCIES Airbil#792-048034460 1. Samples Hand Delivered or Shipped Comments ☐ No Seals Custody seals on coolers or shipping □ No DY C container intact, signed and dated? 3. Outside of coolers or shipping containers are □ No free from damage? 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? Cooler # ERC-99-062 5. Samples received choles or ambient? Custody seals on sample containers intact, □ No ☐ No Seals signed and dated? coc signed and dated? □ No Sample containers are intact? 9. All samples on coc received? All samples □ No received on coc? 10. All sample label information matches coc? D No 11. Samples properly preserved? □ No 12. Samples received within hold times? Z Yes Short holds taken to wet lab? 13. VOA, TOC, TOX free of headspace? ☐ Yes □ No ed n/a 14. QC stickers placed on bottles designated by ☐ No client? 15. Shipment meets LvLI Sample Acceptance □ No Policy? (Identify all bottles not within policy. See reverse side for policy) 16. Project Manager contacted concerning □ Y⇔ ₽ZÎ No discrepancies? name/date (or samples Discrepancies outside criteria) SR-002-B



DATE RECEIVED: 03/22/06 LVL LOT # :06031 CLIENT ID /ANALYSIS LVL # MTX PREP # COLLECTION EXTR/PREP ANALYSIS J11J28 NITRATE NITRITE 001 W 06LN3021 03/20/06 04/10/06 04/10/06 NITRATE NITRITE 001 REP W 06LN3021 03/20/06 04/10/06 04/10/06 NITRATE NITRITE 001 MS W 06LN3021 03/20/06 04/10/06 04/10/06 LAB QC: MB1 NITRATE NITRITE 04/10/06 W 06LN3021 N/A 04/10/06 MB1 BS NITRATE NITRITE W 06LN3021 N/A 04/10/06 04/10/06



#### Analytical Report ·

Client: TNU-HANFORD RC-048 K0263

**W.O.#:** 11343-606-001-9999-00

**LVL#:** 0603L574

Date Received: 03-22-06

#### INORGANIC NARRATIVE

1. This narrative covers the analysis of 1 water sample.

2. The sample was prepared and analyzed in accordance with the method checked on the attached glossary.

LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

- 3. Sample holding time as required by the method and/or contract was met.
- 4. The results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
- 5. The method blank was within the method criteria.
- 6. The Laboratory Control Sample (LCS) was within the laboratory control limits.
- 7. The matrix spike recovery was within the 75-125% control limits.
- 8. The replicate analysis was outside the 20% Relative Percent Difference (RPD) control limit at 23.8%.
- 9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

njp\i03-574

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 12 pages.

02

## Lionville Laboratory Incorporated

## WET CHEMISTRY

## METHODS GLOSSARY FOR WATER SAMPLE ANALYSIS

|                                           |             |                      | OTTED               |
|-------------------------------------------|-------------|----------------------|---------------------|
| A _1.25a.                                 | EPA /600    | <u>SW846</u>         | <u>OTHER</u>        |
| Alledinity Biombonets Continued           | 305.1       |                      |                     |
| AlkalinityBicarbonateCarbonate            | 310.1       |                      | 4010T (1)           |
| BOD                                       | 405.1       |                      | 5210B (b)           |
| Ion Chromatography:                       |             |                      |                     |
| BromideChlorideFluoride                   | 300.0       | 9056                 |                     |
| NitrateNitritePhosphate                   | 300.0       | 9056                 |                     |
| SulfateFormateAcetateOxalate              | 300.0       | 9056                 |                     |
| Chloride                                  | 325.2       | 9251                 |                     |
| Chorine, Residual                         | 330.5 (mod) |                      |                     |
| Cyanide, Amenable to Chlorination         | 335.2       | 9010B                |                     |
| Cyanide, Total                            | 335.2       | 9010B 9014           | ILMO4.0 (e)         |
| Cyanide, Weak Acid Dissociable            |             |                      | 412 (a) 4500CN-1 (l |
| COD                                       | 410.4(mod)  |                      | 5220C (b)           |
| Color                                     | 110.2       |                      |                     |
| Corrosivity by Coupon                     |             | 1110(mod)            |                     |
| Chromium VI                               |             | 7196A                | 3500Cr-D (b)        |
| Fluoride                                  | 340.2       |                      | 4500-FC             |
| Hardness, Calcium                         | 215.2       |                      | <del>_</del>        |
| Hardness, Total                           | 130.2       |                      |                     |
| lodide                                    |             |                      | ASTM D19P202 (1)    |
| Sugfactant                                | /425.1      |                      | _                   |
| ✓ Nitrate-NitriteNitrateNitrite           | √ 353.2     |                      |                     |
| Ammonia                                   | 350.3       |                      |                     |
| Total Kjeldahl Organic Nitrogen           | 351.3       |                      |                     |
| Total Organic Inorganic Carbon            | 415.1       | 9060                 |                     |
| Oil & Grease                              | 413.1       | 9070                 |                     |
| pHpH; paper                               | 150.1       | 9040B 9041A          |                     |
| Petroleum Hydrocarbons, Total Recoverable | 418.1       |                      |                     |
| Phenol                                    | 420.1 42    | <b>20.2</b> 9065 906 | 6                   |
| OrthoTotal Phosphate                      | 365.2       |                      | 4500-P B C          |
| Salinity                                  |             |                      | 210A (a) 2520 (b)   |
| Settleable Solids                         | 160.5       |                      |                     |
| Sulfide                                   | 376.1       | 9030B/9034           | (acid soluble)      |
| Reactive Cyanide Sulfide                  |             |                      | 149030B)            |
| Silica                                    | 370.1       |                      |                     |
| Sulfite                                   | 377.1       | •                    |                     |
| Sulfate                                   | 375.4       | 9038                 |                     |
| Specific Conductance                      | 120.1       | 9050A                |                     |
| Specific Gravity                          |             |                      | D5057-90 213E (a)   |
| Synthetic Precipitation Leach             | 17          | 312                  |                     |
| TotalDissolvedSuspendedSolids             | 160 .12     | .3                   |                     |
| Total Organic Halides                     | 450.1       | 9020B                |                     |
| Turbidity                                 | 180.1       |                      |                     |
| Volatile Solids:                          |             |                      |                     |
| _Total Dissolved Suspended                | 160.4       |                      |                     |
| Other:                                    |             | Method:              |                     |
| VIEW,                                     |             | 141CHOU:             |                     |

### Lionville Laboratory Incorporated

## METHOD REFERENCES AND DATA QUALIFIERS

#### **DATA QUALIFIERS**

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- \* = Indicates that the original sample result is greater than 4x the spike amount added.

#### **ABBREVIATIONS**

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LC = Laboratory Control Sample.

NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

### ANALYTICAL WET CHEMISTRY METHODS

- ASTM Standard Methods.
- USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
- 3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
- a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
- b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
- c. <u>Method of Soil Analysis</u>, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
- d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
- e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
- f. Code of Federal Regulations.

#### INORGANICS DATA SUMMARY REPORT 04/10/06

CLIENT: TNUHANFORD RC-048 K0263

LVL LOT #: 0603L574

|        |         |                   |        |       | REPORTING | DILUTION   |
|--------|---------|-------------------|--------|-------|-----------|------------|
| SAMPLE | SITE ID | ANALYTE           | RESULT | UNITS | LIMIT     | FACTOR     |
|        |         | ***************** |        |       |           | TF602 F2 E |
| -001   | J11J28  | Nitrate Nitrite   | 20.7   | MG/L  | 2.0       | 100        |

#### INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/10/06

CLIENT: TNUHANFORD RC-048 K0263

LVL LOT #: 0603L574

|         |              |                 |        |       | REPORTING | DITOLION |
|---------|--------------|-----------------|--------|-------|-----------|----------|
| SAMPLE  | SITE ID      | ANALYTE         | RESULT | UNITS | LIMIT     | FACTOR   |
| ***     | *****        |                 | *****  |       |           |          |
| BLANK10 | 06LN3021-MB1 | Nitrate Nitrite | 0.020u | MG/L  | 0.020     | 1.0      |

#### INORGANICS ACCURACY REPORT 04/10/06

CLIENT: TNUHANFORD RC-048 K0263

LVL LOT #: 0603L574

|       |                 |                 | SPIKED | INITIAL | SPIKED |        | DILUTION     |
|-------|-----------------|-----------------|--------|---------|--------|--------|--------------|
| SAMPL | E SITE ID       | ANALYTE         | SAMPLE | RESULT  | AMOUNT | *RECOV | FACTOR (SPK) |
|       |                 |                 |        | ******  |        |        |              |
| -001  | J11J28          | Nitrate Nitrite | 66.7   | 20.7    | 50.0   | 92.0   | 100          |
| BLANK | 10 06LN3021-MB1 | Nitrate Nitrite | 0.50   | 0.02u   | 0.5    | 0 99.8 | 1.0          |

#### INORGANICS PRECISION REPORT 04/10/06

CLIENT: TNUHANFORD RC-048 K0263

LVL LOT #: 0603L574

|         |                                        |                 | INITIAL  |           |      | DILUTION     |
|---------|----------------------------------------|-----------------|----------|-----------|------|--------------|
| SAMPLE  | SITE ID                                | ANALYTE         | RESULT   | REPLICATE | RPD  | FACTOR (REP) |
| ******  | ###################################### |                 | ======== | *=======  |      |              |
| -001REP | J11J28                                 | Nitrate Nitrite | 20.7     | 16.3      | 23.8 | 100          |

| nville Labo         | oratory         | Use Only         | Custo                | ody T            | ran  | sf             | er          | Rec       | ord/            | Lab               | W                   | ork   | Re           | equ   | les           | t P                                              | Page_    | o        |             |          | 200          |      |        |
|---------------------|-----------------|------------------|----------------------|------------------|------|----------------|-------------|-----------|-----------------|-------------------|---------------------|-------|--------------|-------|---------------|--------------------------------------------------|----------|----------|-------------|----------|--------------|------|--------|
| 6036                | , 5-,           | 74               |                      | FIELD            | PERS | ONI            | NEL:        | COMP      | LETE O          | NLY SH            | ADE                 | D AR  | EAS          |       |               |                                                  |          |          | Se          | 9        | SRÇ          |      |        |
|                     |                 |                  |                      |                  |      |                |             |           |                 |                   | <b>,</b>            | Ac    | D-F          | GH    | ,             | <del>,</del> .                                   |          | I        |             | <u>=</u> | <del>,</del> | ,    |        |
| ont 7NC             | 1-Ht            | ANFORD           | 5.4F#                | - RC-0           | 48   | 190            |             | Retriger  | ator#           |                   | -                   | 2     | 12           | 2     |               |                                                  | .:       | 13       |             | 2        |              |      |        |
| . Final Proi        | i. Same         | ling Date        |                      |                  |      | 74 T           |             | #/Type    | Container       | Liquid<br>Solid   |                     | س)    | C-           |       | <u> </u>      |                                                  |          |          |             | '        |              |      |        |
|                     |                 | 3-606-           | 001-999              | 79-00            |      | <del>:-`</del> | -           |           |                 | Liquid            |                     | -     | U            | L     |               | <del>                                     </del> |          | 527      |             | 125      |              |      |        |
| ject Conta          | Ct/Pnoi         | Project Manag    | 0.1                  | ·                |      |                |             | Volume    |                 | Solid             |                     | **.   | J            |       | <u> </u>      |                                                  |          |          |             | <u> </u> |              |      |        |
| Sper                | renory.<br>∠ Di | el <u>Stel</u>   | Z TAT                | Doan             | 1    |                |             | Preserv   | llives          |                   |                     |       |              | -     |               | <u> </u>                                         | ļ        | HMA      |             | 1508     |              |      |        |
|                     |                 |                  |                      | . 4              |      | <u></u>        |             | ANALYS    |                 |                   | <b>«</b>            | 1     | ANIC<br>⊋ pp | 10-g  |               |                                                  |          |          | DRG         | NU3      |              |      | ļ      |
| Rec'd               | 3/2             | 2/06             | Date Due             | 4/21/0           | 540  |                |             | REQUES    | STED            |                   | Ş                   | 8     | Pest/        | ਨ੍∓   |               |                                                  |          | Metal    | S           |          |              |      |        |
| RIX                 |                 |                  |                      |                  |      | Ma             | trix        |           |                 |                   | -                   | Į.    | 1            | Ţ     |               | Lior                                             | nville L | aborato  | ry Use      | Опіу     |              | 1    |        |
| ES:<br>Soll         | Lab             |                  | Client ID/Descri     | intion           | -    | Q              | E E E E     | Matrix    | Date Collected  | Time<br>Collected |                     | I     | T            | _     |               |                                                  |          | 133      |             | 19       |              |      |        |
| Sediment<br>Solid   | ID.             |                  |                      | ipiion .         |      |                | <b>/</b> }  |           | 00400154        |                   |                     | CURSH | H8090        | OFEB  |               |                                                  |          | NYETALS  |             | 1431.62  |              | j    | }      |
| Sludge<br>Water     | {               |                  |                      |                  | }    | MS             | MSD         | -         |                 |                   | İ                   | 3     | 0            | 90    |               |                                                  |          | 126      |             | 7        |              |      | j      |
| Oil<br>Air          | 001             | TIII             | 8                    | + 1 was          |      | 1              |             | (J)       | 400/06          | 1102              | 4                   | 3     | 3            | 2     | j             |                                                  | 7.       | 1        |             | 1        |              |      |        |
| Drum<br>Solida      |                 |                  |                      |                  |      |                |             |           | i, Th           |                   | <u></u>             |       |              | 7.574 |               |                                                  | 1.       | ļ        |             |          |              |      |        |
| Orum<br>Liquids     |                 |                  |                      |                  |      | ंस्            | * *         |           |                 |                   | 12.25<br>14.57 m. 1 |       |              |       |               |                                                  |          |          |             |          |              |      |        |
| EP/TCLP<br>Leachate |                 |                  |                      | n eta e.<br>E    |      |                |             |           | 100 L P         |                   | 14.74<br>2 - 14.    |       |              |       |               |                                                  |          |          |             |          |              |      |        |
| Wipe<br>Other       |                 |                  |                      | ***              |      |                |             |           | المورد          |                   |                     |       |              | -     |               |                                                  |          | <u> </u> |             |          |              |      |        |
| Fish                |                 | ·                |                      |                  |      |                |             | -         |                 |                   |                     |       | 17.          | 4-2   |               |                                                  |          |          |             |          |              |      |        |
|                     |                 |                  | -1                   |                  |      |                |             |           |                 | 1 - 4:25          | = 250               | *     | 2 (          |       |               |                                                  |          |          |             |          |              |      | ]      |
|                     | <u></u>         |                  |                      |                  |      |                | 3.5         |           |                 |                   | Talence<br>Talence  |       |              |       |               |                                                  |          |          | <b></b>     | ļ        |              |      |        |
|                     |                 |                  |                      |                  |      |                |             |           |                 |                   |                     |       |              |       |               |                                                  |          | <u> </u> | ļ           |          |              |      |        |
|                     | <u> </u>        |                  | 1 (a) (b)            |                  | ·    |                |             |           |                 |                   |                     |       |              |       |               |                                                  |          |          | <u> </u>    |          |              |      |        |
| dal Instruc         | :Hone:          |                  |                      |                  |      |                | DATE        | E/REVISIO | NS:             |                   |                     |       |              |       |               |                                                  |          |          |             |          |              |      |        |
| STALS               | 7=1             | 4SU Bi,<br>Sn, W | B. Li.M              | O.P. Si          | Sc   |                |             |           | 2.              |                   |                     |       |              | -     |               |                                                  |          | •        |             |          |              |      |        |
| `                   |                 | sn.ll            |                      |                  | ,,   |                |             | -         | 3               |                   |                     |       |              |       |               |                                                  |          |          |             |          |              |      |        |
|                     |                 | , - 0            |                      |                  |      |                | <u></u>     |           | 4               |                   |                     |       |              |       |               |                                                  |          |          |             |          |              |      |        |
|                     |                 |                  |                      |                  | •    |                |             |           | 5               |                   |                     |       |              | •     | <del></del>   | ··                                               |          |          |             |          |              |      |        |
|                     |                 |                  |                      |                  | ·    |                |             |           | 6               |                   |                     |       |              | ·     |               |                                                  |          |          |             |          |              |      |        |
| lelinguished        | đ               | Received         | Date                 | Time             | H    | pnile?         | uished<br>Y | !         | Received<br>by  | l  -              | Dete                | Tir   | me           | F     | elinqui<br>by |                                                  |          |          | elved<br>by |          | Date         | Tim  | 1e     |
| - (13               |                 | The &            | 3/2/06               | (G.z.,           |      |                | -           |           | <del>_</del> -` |                   |                     |       | $\dashv$     |       |               |                                                  | 1011     |          |             | OF       | RIGIN        | IAL. | $\neg$ |
| وكتلو               |                 | 1 permy          | <del>- /- /- V</del> | <del>57.70</del> |      |                |             | _         |                 |                   |                     | +     |              | -     |               | VIPC<br>ASTE                                     | SIL      |          |             |          | WRI          |      | N.I    |

| Washington                                                | n Closur                         | e Hanford                 |               | CHAIL OF COSTOS TOAKS DE ANALTSIS REQUEST |                                  |                                |                              |                    |                                                                              |                           |                                              |                       |             |                                     | Page 1   | of <u>2</u>                            |                                        |
|-----------------------------------------------------------|----------------------------------|---------------------------|---------------|-------------------------------------------|----------------------------------|--------------------------------|------------------------------|--------------------|------------------------------------------------------------------------------|---------------------------|----------------------------------------------|-----------------------|-------------|-------------------------------------|----------|----------------------------------------|----------------------------------------|
| Collector DAFAC                                           | REX<br>ALI                       |                           | (             |                                           | r Centact<br>KESSNER             | Telepho<br>375-4               |                              |                    |                                                                              |                           |                                              | et Coordiz<br>NER, JH | ator        | Price Code                          | 7N       |                                        | rnaround                               |
| Project Designation                                       |                                  | onent of the RCBRA        |               | Samolina<br>199-N                         | Location<br>-26                  |                                |                              |                    |                                                                              |                           | SAF I                                        |                       |             | Air Qualit                          | у 🗆      | 45                                     | Day <del>s</del> ⊣                     |
| Ice Chest No.                                             | 2c-9                             | 9-062                     | 1             | Field Los<br>EL-159                       | ebook No.<br>92                  |                                | CO<br>BES                    | DA<br>SRAS6:       | 520                                                                          | -                         |                                              | od of Ships<br>D EX   | ment        |                                     |          |                                        |                                        |
| Shipped 'To<br>EBERLINE SER'                              | VICES / (JO                      | NVILLE                    | (             | Offsite P                                 | roperty No. AC                   | 603                            | 38                           | _                  |                                                                              |                           |                                              | of Lading//<br>E OSPC | Air Bill I  | No.                                 |          |                                        |                                        |
| POSSIBLE SAMP                                             | LE HAZAI                         | RDS/REMARKS               |               |                                           |                                  |                                |                              |                    |                                                                              |                           |                                              |                       |             |                                     |          |                                        |                                        |
| POTENTIAL RADI                                            | OACTIVE «                        | DOT LIMITS                |               |                                           | Preservation                     | , None                         | 1                            | 3 to pH<br>⊲2      | HNO3 to pH<br><2                                                             | HNO3 t                    | <u>'                                    </u> | HNO3 to pH<br><2      | HNO3 to     | <2                                  |          | Cool 4C                                | Conl 4C                                |
| <br>  Special Handling                                    | a and <i>ia</i> r Si             |                           |               | Type of Container                         |                                  | P                              | '                            | G/P                | G/P                                                                          | G/I                       | P                                            | G/P,                  | G/P         | G/P                                 | a.G      | aG                                     | a.G                                    |
| i -                                                       |                                  | orage                     |               |                                           | No. of Container(s)              | i                              |                              | 1                  | 1                                                                            | 1                         |                                              | 1                     | 1           | 1                                   | 3        | 2                                      | 3                                      |
| Cool 40                                                   | C                                |                           |               | Γ                                         | Volume                           | 125mL                          | 10                           | 00mL               | 1000miL                                                                      | 1000                      | miL                                          | 1000mL                | 1000ml      | L 500mL                             | 1000mL   | . 1000ml,                              | 1000mL                                 |
|                                                           |                                  |                           | Tritican - H3 | Sp                                        | em (1) in<br>pecial<br>rections. | Stronthum<br>89,90 Total<br>Sr | Taoto<br>Theria<br>  Thorium | ium<br>m-232)<br>U | Leosopic<br>Uranhum<br>(Uranhum-<br>233/234,<br>Uranhum-235,<br>Jenelum-238) | Radium -2:<br>Ra-226      |                                              | 8270A (TCL)           | PCBs - 8082 | Pentirides -<br>8081                |          |                                        |                                        |
|                                                           |                                  |                           |               | Date                                      | Sample Time                      |                                | 7                            |                    |                                                                              |                           |                                              |                       |             |                                     |          |                                        |                                        |
| J11J28                                                    |                                  |                           | MAR 2         | 0 200                                     | 5 1102                           |                                |                              | ·                  |                                                                              |                           |                                              |                       |             | Х                                   | Х        | X                                      | X                                      |
|                                                           |                                  |                           |               |                                           |                                  |                                | <del> </del>                 |                    |                                                                              |                           |                                              |                       |             |                                     |          |                                        |                                        |
|                                                           |                                  |                           |               |                                           |                                  |                                |                              |                    |                                                                              |                           |                                              |                       | <del></del> |                                     |          |                                        |                                        |
|                                                           |                                  |                           |               |                                           |                                  |                                | -                            | <u>.</u>           |                                                                              |                           |                                              |                       |             |                                     |          | <u> </u>                               | <u> </u>                               |
| CHAIN OF P                                                | OSSESSIO                         | N.                        | Sign          | /Print N                                  | ames                             | i                              | .1                           | SPEC               | IAL INSTR                                                                    | HCTIC                     | )<br>Ne                                      |                       |             |                                     | <u> </u> | <u> </u>                               | Matrix *                               |
| Retinquisties By Research                                 | <del>K</del>                     | 1 加脂 <sup>me</sup> /2.5   | Received I    | By/Stored I<br>ALES                       | in west Da                       |                                | 50                           | (I) G<br>Cobal     | amma Spec - (<br>t-60, Europiun                                              | Full List)                | ) (Ameri                                     |                       |             | 25. Beryllium-7,<br>tassium-40, Rut |          |                                        | S=Suil<br>SE=Sedimeni<br>SO=Solid      |
| Retinquished By/Rempy                                     |                                  | Date/Time<br>06 /350      | Received 1    |                                           | 32006 13.                        |                                |                              | (2) IC             |                                                                              |                           |                                              |                       |             | senic, Barium, E<br>Lithium, Magne  |          |                                        | S⊫Sludga<br>W = Water<br>O=Oil         |
| Relinquished By/Remov                                     |                                  | Date/Time                 | Received 1    | By/Stored 1                               |                                  | te/Time <b>d</b> /             |                              | Moiyt              | xienum, Nicke                                                                | t. Phosph                 | horus, Po                                    | stassium, Sek         | enium, Sili | icon, Silver. Sod                   |          |                                        | A=Aif<br>DS=Drem Solids                |
| Relinquished Ru/Remov                                     | <i>را" ایک کل</i><br>مالک mmi اس | 6 0900<br>H Date/Time (50 | O Received I  |                                           | R. Sloweder                      | 3-2/<br>te/Time                | -06                          | 1 1 1 1 1          | Iranium, Vanac                                                               | HUM, ZJA                  | ocj; Men                                     | cury - /4/U           | · (CV)      |                                     |          |                                        | DL=Drum Liquids<br>T≃Tissus            |
| L. Edoumlan                                               | IR Star                          | Ser 32106                 | FEL           | EK                                        |                                  |                                |                              |                    |                                                                              |                           |                                              |                       |             |                                     |          |                                        | WieWipe<br>L=Laqual                    |
| Reimmished By Removed From Date/Time Receipt By Stored In |                                  |                           |               |                                           |                                  |                                | 700                          | Perso              | nnel not ava                                                                 | ulable te                 | o                                            |                       |             |                                     |          |                                        | V=Vegetation<br>X=Other                |
| Relinquished By/Resnov                                    |                                  | Date/Time                 | Received I    | By/Stored                                 | In Da                            | te/Time                        |                              | Ref#               | quish sample<br>2A on 3                                                      | s from :<br>/ <u>2/</u> / | 3728<br><u>0 G</u>                           |                       |             |                                     |          |                                        |                                        |
| LABORATORY SECTION                                        | Received By                      |                           | !             |                                           |                                  | Ti                             | itle                         | <u> </u>           |                                                                              |                           |                                              |                       |             |                                     |          | Date/Time                              | 1                                      |
| FINAL SAMPLE Disposal Method DISPOSITION                  |                                  |                           |               |                                           |                                  |                                |                              | ·                  | Dispo                                                                        | sed By                    |                                              |                       |             |                                     | <u> </u> | Date/Time                              | ······································ |
|                                                           | ·                                |                           | ·             |                                           |                                  |                                |                              |                    | *****                                                                        |                           |                                              |                       |             |                                     |          | ······································ | _                                      |

| Washington Clos                                 | ure Hanford              | C                   | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST    |                    |                      |                   |          |            |                         |              |                                       |                         | Page 2    | of <u>2</u>                                 |
|-------------------------------------------------|--------------------------|---------------------|---------------------------------------------|--------------------|----------------------|-------------------|----------|------------|-------------------------|--------------|---------------------------------------|-------------------------|-----------|---------------------------------------------|
| Collector DUFYCE                                |                          |                     | any Contact<br>AN KESSNER                   | Telephor<br>375-4  |                      |                   |          |            | iect Coordi<br>SNER, JH | nator        | Price Code                            | 7N                      |           | rnaround                                    |
| Project Designation<br>100 Area and 300 Area Co | omponent of the RCBRA    |                     | ling Location<br>-N-26                      |                    |                      |                   |          | SAF<br>RC- | No.<br>048              |              | Air Qualit                            | у 🗆                     | 45        | Days 1                                      |
| Ice Chest No. ERC-                              | 99-062                   |                     | Loebook No.<br>1592                         |                    | COA<br>BESRA         | NS6520            |          |            | hod of Shin<br>ED EX    | ment         |                                       |                         |           |                                             |
| Shipped To<br>EBERLINE SERVICES A               | LIONVILLE                | Offsite             | e Property No. AO                           | 6033               | 8                    |                   |          |            | of Lading/<br>EE OSPC   | Air Bill N   | Vo.                                   |                         |           | _                                           |
| POSSIBLE SAMPLE HA                              | ZARDS/REMARKS            |                     |                                             |                    |                      |                   |          |            |                         |              |                                       |                         |           |                                             |
| POTENTIAL RADIOACTIV                            | 'E < DOT LIMITS          |                     | Preservation                                | Cool 4C            | 1125O4 to<br><2 Cool |                   | <u> </u> |            |                         | <u> </u>     |                                       |                         | <u> </u>  |                                             |
| Special Handling and/o                          | r Storage                |                     | Type of Container                           | P                  | GVP                  |                   |          |            |                         |              |                                       |                         |           |                                             |
| Cool 40C                                        | i Storage                |                     | No. of Container(s)                         |                    | 1                    |                   |          |            |                         |              |                                       |                         |           |                                             |
| C001 7 C                                        | ,                        |                     | Volume                                      | 125mL              | 125ml                | L                 |          |            |                         |              |                                       |                         |           |                                             |
| ·                                               | SAMPLE ANA               |                     | See item (1) in<br>Special<br>Instructions. | NO2/NO.<br>353.2   |                      |                   |          |            |                         |              |                                       |                         |           |                                             |
| Sample No.                                      | Matrix *                 | Sample Date         | Sample Time                                 |                    |                      |                   |          |            |                         | N COL        |                                       |                         |           |                                             |
| J11J28                                          | WATER                    | MAR 2U 2            | MG 1107                                     |                    | X                    |                   |          |            | 77 P. 1 L.3             |              |                                       |                         |           |                                             |
|                                                 |                          |                     | ·                                           |                    |                      |                   |          |            |                         |              |                                       |                         |           |                                             |
|                                                 |                          |                     |                                             |                    |                      |                   |          |            |                         |              |                                       |                         |           |                                             |
|                                                 |                          |                     |                                             |                    |                      |                   |          |            |                         |              |                                       |                         |           |                                             |
|                                                 |                          |                     |                                             | <u> </u>           |                      |                   |          |            |                         |              |                                       |                         |           |                                             |
| CHAIN OF POSSESS                                |                          | Sign/Print          |                                             |                    | SP                   | ECIAL INSTR       | RUCTIO   | ONS        |                         |              | · · · · · · · · · · · · · · · · · · · | ·                       |           | Matrix *                                    |
| F. M. HALL MAR                                  | 2 0 2006                 | Received By/Ston    |                                             |                    | 50 a                 | ) IC Anjons - 300 | .0 (Bron | nide, Ch   | doride, Fluori          | de, Nitrate. | Nitrite. Phosph                       | atc, Sulfate}           |           | SaSui)<br>SE=Sediment                       |
| Relinquished By/Removed From                    | Date/Time                | Received By/Ston    | ea In                                       | ate/Time           |                      |                   |          |            |                         |              |                                       |                         |           | SO=Solid<br>SI=Studge                       |
| SJOALES/All-3                                   | 32006 / 350<br>Date/Time |                     |                                             | / 350 atc/Time 690 | 20                   |                   |          |            |                         |              |                                       |                         |           | W = Welter<br>O=Oil                         |
| Retinquished By/Removed From 3-2                | 1-06 0900                | Received By/Ston    | on IK Flunder                               |                    |                      |                   |          |            |                         |              |                                       |                         |           | A=Air<br>DS=Drise Solids<br>DL=Drom Liquids |
| Relinquished By/Removed From                    | WCH Date/Time /5         | To Received By/Ston | ed In Da                                    | tte/Time           |                      |                   |          |            |                         |              |                                       |                         |           | T=Tissue WI=Wye                             |
| K. Edmundson &                                  | EX                       |                     | _                                           |                    |                      |                   |          |            |                         |              |                                       | Latigued<br>V=Vegetalem |           |                                             |
| Religatished By/Respoved From                   | ed in 3 22 -c            | ate/Time<br>X6 092  | Pe                                          | rsonnel not ava    | ailable to           | 0<br>1728         |          |            |                         | •            |                                       | X=Other                 |           |                                             |
| Relinquished By/Removed From                    |                          | ete/Time            |                                             | ef# 24 on 3        | 1211                 | 06                |          |            |                         |              |                                       |                         |           |                                             |
| LABORATORY Received By SECTION                  |                          |                     |                                             | Tit                | l<br>le              |                   |          |            | -                       |              |                                       | E                       | Date/line |                                             |
| FINAL SAMPLE Disposal Method DISPOSITION        |                          |                     |                                             |                    |                      | Dispo             | seed By  |            |                         |              |                                       | í                       | Date/lime |                                             |
|                                                 |                          |                     |                                             |                    |                      |                   |          |            |                         |              |                                       |                         | -         |                                             |

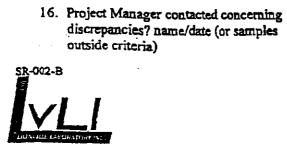
## Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

| •        | SAM LE RECEI                                                                                                             | •            |               |                   |          |
|----------|--------------------------------------------------------------------------------------------------------------------------|--------------|---------------|-------------------|----------|
| CLIEN    | IT: THU- HANFORD                                                                                                         | Dat          | e: 3/22/0     | 26                |          |
| Durchase | Order / Project# /                                                                                                       |              | •             | ~                 |          |
|          | SOW#/Release #: RC - 048                                                                                                 | <b>a</b> .   | 1.0-4.3       | // //             | 0 -      |
| LvLI     | Batch #: 0603L574                                                                                                        | Sau          | ple Custod    | ian: / New        | nones.   |
|          | NOTE: EXP                                                                                                                | LAIN ALL DIS | CREPANCIE     | S                 |          |
|          |                                                                                                                          |              | 00            |                   | 4803 446 |
| 1.       | Samples Hand Delivered or Shipped                                                                                        | Carrier - 9  | WGP           | Airbul# / (000    | 7605 (10 |
| 2.       | Custody seals on coolers or shipping container intact, signed and dated?                                                 | De Yes       | □ No          | □ No Scals        | Comments |
| 3.       | Outside of coolers or shipping containers are free from damage?                                                          | Yes          | □ No          |                   |          |
| 4.       | All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | 10 Yes       | □ No          |                   |          |
| 5.       | Samples received cooled or ambient?                                                                                      | Temp 3       | ° °C          | Cooler# ER        | c.99-062 |
| 6.       | Custody seals on sample containers intact, signed and dated?                                                             | Die          | .□ <b>ਮ</b> o | □ No Scals        |          |
| 7.       | coc signed and dated?                                                                                                    | DX's         | □ No          |                   | •        |
| 8.       | Sample containers are intact?                                                                                            | D/fex        | □ <b>№</b> 0  |                   |          |
| 9.       | All samples on coc received? All samples received on coc?                                                                | ПХв          | □ <b>1</b> %  |                   |          |
| -        | . All sample label information matches coc?                                                                              | E Yes        | □ No          |                   |          |
| 11       | . Samples properly preserved?                                                                                            | DYes /       | □ No          |                   |          |
| 12       | 2. Samples received within hold times?  Short holds taken to wet lab?                                                    | ∑E Yes       | □ No          |                   |          |
| 13       | 3. VOA, TOC, TOX free of headspace?                                                                                      | □ Yes        | □ No          | N/A               |          |
| 14       | 4. QC stickers placed on bottles designated by client?                                                                   | ₩Yes         | □ No          | DANA<br>3/3/20low |          |
| 1:       | 5. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)   | D Yes        | □ No          | ·<br>·            |          |
|          |                                                                                                                          |              |               |                   |          |

☐ Yes

□ No

PINo Discrepancies







Joan Kessner WC-Hanford 3190 Washington Way MSIN H9-03 Richland, WA 99354

Subject: Analytical Data Package

Dear Ms. Kessner:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

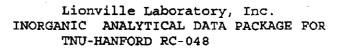
| SDG # K0263 SAF # RC-048 Date Received 3/216 # Samples 3 Mat\rix WATER Volatiles Semivolatiles Pest/PCB PAH DRO/KRO/GRO GC Alcohols Herbicides Metals Inorganics X | LvLl Batch #  | 0603L563 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|
| Date Received 3/216 # Samples 3 Mat\rix WATER Volatiles Semivolatiles Pest/PCB PAH DRO/KRO/GRO GC Alcohols Herbicides Metals                                       | SDG#          | K0263    |
| # Samples 3  Mat\rix WATER  Volatiles Semivolatiles Pest/PCB PAH DRO/KRO/GRO GC Alcohols Herbicides Metals                                                         | SAF#          | RC-048   |
| Mat\rix WATER  Volatiles Semivolatiles Pest/PCB PAH DRO/KRO/GRO GC Alcohols Herbicides Metals                                                                      | Date Received | 3/216    |
| Volatiles Semivolatiles Pest/PCB PAH DRO/KRO/GRO GC Alcohols Herbicides Metals                                                                                     | # Samples     | 3        |
| Semivolatiles Pest/PCB PAH DRO/KRO/GRO GC Alcohols Herbicides Metals                                                                                               | Mat\rix       | WATER    |
| Pest/PCB PAH DRO/KRO/GRO GC Alcohols Herbicides Metals                                                                                                             | Volatiles     |          |
| PAH DRO/KRO/GRO GC Alcohols Herbicides Metals                                                                                                                      | Semivolatiles |          |
| DRO/KRO/GRO GC Alcohols Herbicides Metals                                                                                                                          | Pest/PCB      |          |
| GC Alcohols Herbicides Metals                                                                                                                                      | PAH           |          |
| Herbicides<br>Metals                                                                                                                                               | DRO/KRO/GRO   |          |
| Metals                                                                                                                                                             | GC Alcohols   |          |
|                                                                                                                                                                    | Herbicides    | (1000)   |
| Inorganics X                                                                                                                                                       | Metals        |          |
|                                                                                                                                                                    | Inorganics    | X        |

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely, Liopville Laboratory Incorporated

Orlette S. Johnson Project Manager

r:\group\pm\orlette\tnu-hanford\data\b\_ltrs.doc



LVL LOT # :0603L 03/21/06 DATE RECEIVED: CLIENT ID /ANALYSIS LVL # PREP # COLLECTION EXTR/PREP ANALYSIS J11J28 BROMIDE BY IC 001 06LIC034 03/20/06 03/21/06 03/21/06 06LIC034 03/21/06 BROMIDE BY IC 001 REP W 03/20/06 03/21/06 BROMIDE BY IC 001 MS W 06LIC034 03/20/06 03/21/06 03/22/06 03/20/06 CHLORIDE BY IC 001 W 06LIC034 03/21/06 03/21/06 CHLORIDE BY IC 001 REP W 06LIC034 03/20/06 03/21/06 03/21/06 001 MS 06LIC034 03/20/06 03/21/06 CHLORIDE BY IC 03/22/06 FLUORIDE BY IC 001 06LIC034 03/20/06 03/21/06 03/21/06 001 REP 06LIC034 03/20/06 FLUORIDE BY IC W 03/21/06 03/21/06 FLUORIDE BY IC 001 MS W 06LIC034 03/20/06 03/21/06 03/22/06 NITRITE BY IC 001 W 06LIC034 03/20/06 03/21/06 03/21/06 1605 NITRITE BY IC 001 REP W 06LIC034 03/20/06 03/21/06 03/21/06 NITRITE BY IC 001 MS W 06LIC034 03/20/06 03/21/06 03/22/06 0909 W NITRATE BY IC 001 06LIC034 03/20/06 03/21/06 03/21/06 1456 NITRATE BY IC 001 REP W 06LIC034 03/20/06 03/21/06 03/21/06 NITRATE BY IC 001 MS W 06LIC034 03/20/06 03/21/06 03/22/06 PHOSPHATE BY IC 001 W 06LIC034 03/20/06 03/21/06 03/21/06 1605 PHOSPHATE BY IC 001 REP W 06LIC034 03/20/06 03/21/06 03/21/06 1622 PHOSPHATE BY IC 001 MS 06LIC034 03/20/06 03/21/06 03/22/06 0909 SULFATE BY IC 001 06LIC034 03/20/06 03/21/06 03/21/06 SULFATE BY IC 001 REP W 06LIC034 03/20/06 03/21/06 03/21/06 SULFATE BY IC 001 MS M 06LIC034 03/20/06 03/21/06 03/22/06 LAB QC: BROMIDE BY IC MB1 06LIC034 N/A 03/21/06 03/21/06 MB1 BS BROMIDE BY IC 06LIC034 N/A 03/21/06 03/21/06 CHLORIDE BY IC MB1 06LIC034 N/A 03/21/06 03/21/06 CHLORIDE BY IC MB1 BS N/A W 06LIC034 03/21/06 03/21/06 FLUORIDE BY IC MB1 W 06LIC034 N/A 03/21/06 03/21/06 FLUORIDE BY IC MB1 BS W 06LIC034 N/A 03/21/06 03/21/06 NITRITE BY IC MB1 W 06LIC034 N/A 03/21/06 03/21/06 MB1 BS 03/21/06 NITRITE BY IC W 06LIC034 N/A03/21/06 NITRATE BY IC MB1 W 06LIC034 N/A 03/21/06 03/21/06 NITRATE BY IC MB1 BS W 06LIC034 N/A 03/21/06 03/21/06 PHOSPHATE BY IC MB1 03/21/06 06LIC034 N/A 03/21/06

910111273 AA 1876

DATE RECEIVED: 03/21/06

LVL LOT # :0603L563

| CLIENT ID /ANALYSIS | LVL #  | MTX | PREP #   | COLLECTION | EXTR/PREP | ANALYSIS |
|---------------------|--------|-----|----------|------------|-----------|----------|
|                     |        |     |          |            |           | · · ———  |
| PHOSPHATE BY IC     | MB1 BS | W   | 06LIC034 | N/A        | 03/21/06  | 03/21/06 |
| SULFATE BY IC       | MB1    | W   | 06LIC034 | N/A        | 03/21/06  | 03/21/06 |
| SULFATE BY IC       | MB1 BS | W   | 06LIC034 | N/A        | 03/21/06  | 03/21/06 |



#### **Analytical Report**

Client: TNU-HANFORD RC-048 KOZ63

W.O.#: 11343-606-001-9999-00

LVL#: 0603L563

Date Received: 03-21-06

#### INORGANIC NARRATIVE

1. This narrative covers the analyses of 1 water sample.

2. The sample was prepared and analyzed in accordance with the method checked on the attached glossary.

LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

- 3. Sample holding times as required by the method and/or contract were met (see the sample chronology summary for analyses times for short hold samples).
- 4. The results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
- 5. The method blanks were within the method criteria.
- 6. The Laboratory Control Samples (LCS) were within the laboratory control limits.
- 7. The matrix spike recoveries for Bromide, Chloride, Fluoride, Nitrite, Nitrate, Phosphate and Sulfate were within the 75-125% control limits.
- 8. The replicate analyses for Bromide, Chloride, Nitrite, Nitrate, Phosphate and Sulfate were within the 20% Relative Percent Difference (RPD) control limit however replicate analysis for Fluoride was outside the control limit that may be attributed to sample inhomogeneity.
- 9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Laboratory Manager

Lionville Laboratory Incorporated

njp\i03-563

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 12 pages.

03

## Lionville Laboratory Incorporated

## WET CHEMISTRY

## METHODS GLOSSARY FOR WATER SAMPLE ANALYSIS

|                                           | EPA /600                        | SW846             | OTHER              |
|-------------------------------------------|---------------------------------|-------------------|--------------------|
| Acidity                                   | 305.1                           |                   |                    |
| AlkalinityBicarbonateCarbonate            | 310.1                           |                   |                    |
| BOD                                       | 405.1                           |                   | 5210B (b)          |
| Ion Chromatography:                       |                                 |                   |                    |
| ✓Bromide ✓Chloride ✓Fluoride              | <b>300.0</b>                    | 9056              |                    |
| Nitrate Nitrite Phosphate                 | 300.0                           | 9056              |                    |
| Sulfate Formate Acetate Oxalate           | 300.0                           | 9056              |                    |
| Chloride                                  | 325.2                           | 9251              |                    |
| Chorine, Residual                         | 330.5 (mod)                     | •                 |                    |
| Cyanide, Amenable to Chlorination         | 335.2                           | 9010B             |                    |
| Cyanide, Total                            | 335.2                           | 9010B 9014        | ILMO4.0 (e)        |
| Cyanide, Weak Acid Dissociable            |                                 | <del></del>       | 412 (a) 4500CN-I ( |
| COD                                       | 410.4(mod)                      | unit.             | 5220C (b)          |
| Color                                     | 110.2                           |                   | - Contraction      |
| Corrosivity by Coupon                     |                                 | 1110(mod)         |                    |
| Chromium VI                               |                                 | 7196A             | 3500Cr-D (b)       |
| Fluoride                                  | 340.2                           | _                 | 4500-FC            |
| Hardness, Calcium                         | <u> </u>                        |                   | _                  |
| Hardness, Total                           | 130.2                           |                   | •                  |
| lodide                                    |                                 |                   | ASTM D19P202 (1)   |
| Surfactant                                | 425.1                           |                   |                    |
| Nitrate-NitriteNitrateNitrite             | 353.2                           |                   |                    |
| Ammonia                                   | 350.3                           |                   |                    |
| TotalKjeldahlOrganic Nitrogen             | 351.3                           |                   |                    |
| Total Organic Inorganic Carbon            | 415.1                           | _ 9060            |                    |
| Oil & Grease                              | 413.1                           | 9070              |                    |
| pH pH; paper                              | 150.1                           | 9040B _ 9041A     |                    |
| Petroleum Hydrocarbons, Total Recoverable | 418.1                           | 2015 221          | _                  |
| Phenol                                    | $\frac{420.1}{265.2}$           | 9065 906          |                    |
| Ortho Total Phosphate                     | 365.2                           |                   | 4500-P B C         |
| Salinity                                  | 1/0 5                           |                   | 210A (a) 2520 (b)  |
| Settleable Solids<br>Sulfide              | 160.5                           | 00200/0024        | Zanii andria       |
|                                           | 376.1                           |                   | (acid soluble)     |
| Reactive Cyanide Sulfide Silica           | 270.1                           | _ Section 7.3 (90 | 149030B)           |
| Sulfite                                   | $\frac{370.1}{377.1}$           |                   |                    |
| Sulfate                                   | <del> 377.1</del> 375.4         | 0029              |                    |
| Specific Conductance                      | 120.1                           | 9038              |                    |
| Specific Gravity                          | 120.1                           | 9050A             | D5057.00 212E (-)  |
| Synthetic Precipitation Leach             | 1217                            |                   | D5057-90 213E (a)  |
| TotalDissolvedSuspendedSolids             | 160 .1 — 1312<br>160 .1 — .2 .3 | 2 ·               |                    |
| Total Organic Halides                     | 450.1                           | 9020B             |                    |
| Turbidity                                 | 180.1                           | - 70201           |                    |
| Volatile Solids:                          | 100,1                           |                   |                    |
| TotalDissolvedSuspended                   | 160.4                           |                   | •                  |
| Other:                                    |                                 | ethod:            |                    |
| ₩ 14 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  | 471                             | -LIGH.            |                    |

### Lionville Laboratory Incorporated

## METHOD REFERENCES AND DATA QUALIFIERS

### **DATA QUALIFIERS**

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- \* = Indicates that the original sample result is greater than 4x the spike amount added.

#### **ABBREVIATIONS**

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LC = Laboratory Control Sample.

NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

### ANALYTICAL WET CHEMISTRY METHODS

- ASTM Standard Methods.
- USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
- 3. <u>Test Methods for Evaluating Solid Waste</u> (USEPA SW-846).
- a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
- b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
- c. <u>Method of Soil Analysis</u>, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
- d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
- e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
- f. Code of Federal Regulations.

#### INORGANICS DATA SUMMARY REPORT 03/23/06

CLIENT: TNU-HANFORD RC-048

LVL LOT #: 0603L563

| SAMPLE | SITE ID             | ANALYTE         | RESULT | UNITS | LIMIT | PACTOR |
|--------|---------------------|-----------------|--------|-------|-------|--------|
| ****   | <b>以次东京中京安全是安全中</b> | ~               |        | ***** |       | *****  |
| -001   | J11J28              | Bromide by IC   | 0.25 u | MG/L  | 0.25  | 1.0    |
|        |                     | Chloride by IC  | 20.1   | MG/L  | 2.5   | 10.0   |
|        | -                   | Fluoride by IC  | 0.32   | MG/L  | 0.25  | 1.0    |
|        | •                   | Nitrite by IC   | 0.25 և | MG/L  | 0.25  | 1.0    |
|        |                     | Nitrate by IC   | 71.5   | MG/L  | 2.50  | 10.0   |
|        |                     | Phosphate by IC | 0,25 u | MG/L  | 0.25  | 1.0    |
|        |                     | Sulfate by IC   | 92.7   | MG/L  | 2.5   | 10.0   |

#### INORGANICS METHOD BLANK DATA SUMMARY PAGE 03/23/06

CLIENT: TNU-HANFORD RC-048

LVL LOT #: 0603L563

|        |                |                 |        |       | KEFORITING | DIEGITOR |
|--------|----------------|-----------------|--------|-------|------------|----------|
| SAMPLE | SITE ID        | ANALYTE         | RESULT | UNITS | LIMIT      | FACTOR   |
|        | *************  | *~~~            |        | ===== |            |          |
| BLANK1 | 0 06LIC034-MB1 | Bromide by IC   | 0.25 u | MG/L  | 0.25       | 1.0      |
|        |                | Chloride by IC  | 0.25 u | MG/L  | 0.25       | 1.0      |
|        |                | Fluoride by IC  | 0.25 u | MG/L  | 0.25       | 1.0      |
|        |                | Nitrite by IC   | 0.25 น | MG/L  | 0.25       | 1.0      |
|        |                | Nitrate by IC   | 0.25 u | MG/L  | 0.25       | 1.0      |
|        |                | Phosphate by IC | 0.25 u | MG/L  | 0.25       | 1.0      |
|        |                | Sulfate by IC   | 0.25 ໝ | MG/L  | 0.25       | 1.0      |

#### INORGANICS ACCURACY REPORT 03/23/06

CLIENT: TNU-HANFORD RC-048

WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0603L563

|         |              |                 | SPIKED | INITIAL | SPIKED |        | DILUTION     |
|---------|--------------|-----------------|--------|---------|--------|--------|--------------|
| SAMPLE  | SITE ID      | ANALYTE         | SAMPLE | RESULT  | TRUOMA | *RECOV | FACTOR (SPK) |
| ***     |              |                 |        |         |        |        |              |
| -001    | J11J28       | Bromide by IC   | 10.3   | 0.12    | 10.0   | 102.0  | 2.0          |
|         | •            | Chloride by IC  | 124    | 20.1    | 100    | 103.6  | 20.0         |
|         |              | Fluoride by IC  | 10.6   | 0.32    | 10.0   | 102.4  | 2.0          |
|         |              | Nitrite by IC   | 10.0   | 0.25u   | 10.0   | 100.4  | 2.0          |
|         |              | Nitrate by IC   | 180    | 71.5    | 100    | 108.9  | 20.0         |
|         |              | Phosphate by IC | 11.0   | 0.25u   | 10.0   | 109.6  | 2.0          |
|         |              | Sulfate by IC   | 203    | 92.7    | 100    | 110.6  | 20.0         |
| BLANK10 | 06LIC034-MB1 | Bromide by IC   | 4.9    | 0.25u   | 5.0    | 97.2   | 1.0          |
|         |              | Chloride by IC  | 4.7    | 0.25u   | 5.0    | 93.9   | 1.0          |
|         |              | Fluoride by IC  | 4.9    | 0.25u   | 5.0    | 98.0   | 1.0          |
|         |              | Nitrite by IC   | 5.02   | 0.25u   | 5.00   | 100.3  | 1.0          |
|         |              | Nitrate by IC   | 4.84   | 0.25u   | 5.00   | 96.9   | 1.0          |
|         |              | Phosphate by IC | 5.3    | 0.25u   | 5.0    | 105.5  | 1.0          |
|         |              | Sulfate by IC   | 4.8    | 0.25u   | 5.0    | 96.4   | 1.0          |
|         |              |                 |        |         |        |        |              |

#### INORGANICS PRECISION REPORT 03/23/06

CLIENT: TNU-HANFORD RC-048

LVL LOT #: 0603L563

|         |                                         |                 | INITIAL |           |        | DILUTION     |
|---------|-----------------------------------------|-----------------|---------|-----------|--------|--------------|
| SAMPLE  | SITE ID                                 | ANALYTE         | RESULT  | REPLICATE | RPD    | FACTOR (REP) |
| ****    | *************************************** |                 |         |           | ****** |              |
| -001REP | J11J28                                  | Bromide by IC   | 0.25u   | 0.25u     | NC     | 1.0          |
|         |                                         | Chloride by IC  | 20.1    | 20.1      | 0.13   | 10.0         |
|         |                                         | Fluoride by IC  | 0.32    | 0.51      | 45.6   | 1.0          |
|         |                                         | Nitrite by IC   | 0.25u   | 0.25u     | NC     | 1.0          |
|         |                                         | Nitrate by IC   | 71.5    | 72.3      | 1.2    | 10.0         |
|         |                                         | Phosphate by IC | 0.25u   | 0.25u     | NC     | 1.0          |
|         |                                         | Sulfate by IC   | 92.7    | 94.0      | 1.4    | 10.0         |

| Lionville Labo                                     |              |                     | Custo            | ody Tra   |              |                            |                        |                                       | •                 |              |                                              |              | eqι  | ıes          | t P  | age_         | <u>l</u> o |             | SRC         | W              |             |
|----------------------------------------------------|--------------|---------------------|------------------|-----------|--------------|----------------------------|------------------------|---------------------------------------|-------------------|--------------|----------------------------------------------|--------------|------|--------------|------|--------------|------------|-------------|-------------|----------------|-------------|
|                                                    |              |                     |                  |           |              |                            | Retrige                | rator #                               |                   |              |                                              | Т            | 1    | 1            |      | <del> </del> |            | <del></del> | A           |                | <del></del> |
|                                                    |              |                     | <u> </u>         | 8-14-0    |              |                            | <del></del> -          |                                       | Liquid            |              | . :                                          |              |      |              |      |              |            |             | ipl         |                | 1           |
| Est. Final Proj                                    | . samp       | iing Date<br>ペリス-/ル | 01-011-          | 9999 -00  | 1 2          | •                          | #/Type                 | Container                             | Solid             |              |                                              |              |      | <u>'</u>     |      |              |            |             |             |                |             |
| Project Conta                                      | ct/Phor      | ne #                | North Control    |           |              |                            | Volume                 |                                       | Liquid            |              |                                              |              |      | 7            |      |              |            |             | labm        |                |             |
| Lionville Labo                                     | ratory       | Project Man         | ager <u>0,00</u> | tteslohn  | <u> </u>     |                            | Preserv                | stives                                | Solid             | <del> </del> | <u>                                     </u> | -            |      | ļ            |      | ļ            |            |             |             |                | -           |
|                                                    |              |                     |                  | Days-     |              |                            |                        |                                       | <del>,</del> .    |              | ORG                                          | ANIC         | L    | -            |      |              | INC        | RG          | 9           |                |             |
| Date Rec'd 3                                       | ا ہے ا       | _ م                 | Date Due         | 4/20/06   |              |                            | REQUE                  |                                       | <del></del>       | δ<br>Š       | BNA                                          | Pest/<br>PCB | Herb |              |      | 1,0          | Metal      | Š           | 1 A 1 3 A 4 |                |             |
| MATRIX                                             |              |                     |                  |           | Ī            | ······                     |                        |                                       |                   |              | L                                            |              | 1    | <u></u>      | Lion | ville La     | borato     | ry Usa Only |             | 1              |             |
| CODES:<br>S - Soll<br>SE - Settiment<br>SO - Solid | Lab<br>ID    |                     | Client ID/Descri | ption     | Ch           | atrix<br>2C<br>osen<br>(/) | Matrix                 | Date<br>Collected                     | Time<br>Collected |              |                                              | -            |      | •            |      |              |            |             | 6.0         |                |             |
| SL - Skudge<br>W - Water                           |              |                     |                  |           | MS           | MSD                        |                        |                                       |                   |              |                                              | _            |      |              |      |              |            |             | 17          |                |             |
| O - Oil<br>A - Air<br>DS - Drum                    | 001          | الالل               | <b>28</b>        |           | 1            | <b>V</b>                   | W                      | 3.20 64                               | 1102              | ,            |                                              |              | :    |              |      |              | <u>-</u> - |             | X           |                |             |
| Solida .<br>DL - Drum                              | <u></u>      |                     |                  |           | -            | ļ                          |                        |                                       |                   |              |                                              |              |      |              |      |              |            |             | 1 1.        |                |             |
| Liquids L - EP/TCLP                                | ļ            |                     |                  |           | ***          |                            |                        | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |                   |              |                                              |              |      | -            | ļ    |              |            | <u> </u>    | -           | <del> </del> - |             |
| Leachale<br>WI - Wipe                              |              |                     |                  |           |              | -                          | <u> </u>               |                                       |                   |              |                                              | -            | ··   |              |      |              |            |             | 1           |                | -           |
| X - Other<br>F - Fish                              | <del> </del> |                     |                  |           | 1.           |                            |                        |                                       |                   |              |                                              | 1 2          | 1.5  | -            |      | <del> </del> |            |             | +++         |                |             |
| •                                                  |              |                     |                  |           | <del> </del> |                            | .,                     |                                       | , ,               |              | -                                            |              |      |              |      |              |            |             | <del></del> |                | +           |
|                                                    |              |                     |                  |           |              | -                          | " #4 <sub>1,2</sub> #2 |                                       |                   | 7.2          | . ,5                                         |              |      |              |      |              |            |             | 1           |                |             |
|                                                    |              |                     |                  |           | 25           |                            |                        | y and a                               |                   |              |                                              |              |      | .,*          |      |              |            |             |             |                |             |
|                                                    |              |                     |                  |           | <i>t</i> :\  |                            |                        | 4.376                                 |                   |              | 1 A1                                         |              |      |              |      |              |            |             |             |                |             |
| Special Instruc                                    |              | -,61,50             | , NO3,NO         | , PO4,594 |              | DAT                        | E/REVISIO              | NS: 1,<br>_ 1,<br>_ 2                 |                   |              |                                              |              |      | <del>2</del> |      |              |            | •           |             |                |             |
|                                                    |              |                     | ·                |           |              |                            |                        | . 3<br>. 4<br>. 5                     |                   |              |                                              |              |      |              | •    |              |            |             |             |                |             |

| Relinquished<br>by | Received<br>by | Date    | Time |  |  |
|--------------------|----------------|---------|------|--|--|
| Pled. Ex           | Daniel         | 3-21-04 | GIS  |  |  |
|                    | 70             |         |      |  |  |

| ] | Reilnquished<br>by | Received<br>by | Date | Time |  |  |  |
|---|--------------------|----------------|------|------|--|--|--|
| 1 |                    |                |      |      |  |  |  |
| 1 |                    |                |      |      |  |  |  |

| Relinquished<br>by | Received<br>by | Date      | Time     |  |  |
|--------------------|----------------|-----------|----------|--|--|
| COMPOS             |                |           |          |  |  |
| WASTE"             |                | राजाभा    | L        |  |  |
|                    | 5.0            | CALLY CO. | Co. 19 1 |  |  |

| Washington Closure Hauford  Collector DUFFIEK  F. M. HALL                 |                          | C                |                                                                   |                                            |                                                  |                                         |                                       | REQUES                             | )UEST R                                      |               |   | 048-367        | Page 2             | of <u>2</u>                              |
|---------------------------------------------------------------------------|--------------------------|------------------|-------------------------------------------------------------------|--------------------------------------------|--------------------------------------------------|-----------------------------------------|---------------------------------------|------------------------------------|----------------------------------------------|---------------|---|----------------|--------------------|------------------------------------------|
|                                                                           |                          |                  |                                                                   |                                            |                                                  |                                         |                                       | Project Coordinator<br>KESSNER, JH |                                              | Price Code 7N |   | 7N             | Data Turnaround    |                                          |
| Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa |                          |                  | Sampling Location<br>199-N-26                                     |                                            |                                                  |                                         | SAF No.<br>RC-048                     |                                    | Air Quality 🔲                                |               |   | 45 Days        |                    |                                          |
| Ice Chest No. AFS 04 037                                                  |                          |                  |                                                                   |                                            |                                                  | COA Method of Shipmer BESRAS6520 PED EX |                                       |                                    | pment                                        | ıt            |   |                |                    |                                          |
| Shipped To EBERLINE SERVICES LIONVILLE                                    |                          |                  | Offsite Property No. A060337 Bill of Lading/Air Bill No. SEE OSPC |                                            |                                                  |                                         |                                       |                                    |                                              |               |   |                |                    |                                          |
| POSSIBLE SAMPLE HAZA                                                      | ARDS/REMARKS             |                  |                                                                   |                                            |                                                  |                                         |                                       |                                    |                                              |               |   |                |                    |                                          |
| POTENTIAL RADIOACTIVE                                                     | < DOT LIMITS             |                  | Preservation                                                      | Cool 4C                                    | H2SQ4 H<br><2 Coo                                | 14C                                     |                                       |                                    |                                              |               |   |                |                    |                                          |
| Special Handling and/or Storage                                           |                          |                  | Type of Container                                                 | P                                          | G/F                                              | · · · · · · · · · · · · · · · · · · ·   |                                       |                                    | ļ                                            |               |   |                |                    |                                          |
|                                                                           |                          |                  | No. of Container(s)                                               |                                            | 1 1                                              |                                         |                                       | ,                                  | <u></u>                                      |               |   | -              |                    |                                          |
|                                                                           |                          |                  | Volume                                                            | 125mL<br>3                                 | 125m                                             |                                         |                                       | }                                  |                                              |               |   |                |                    |                                          |
|                                                                           |                          |                  |                                                                   | See item (2) i<br>Special<br>Instructions. | 353.2                                            |                                         |                                       |                                    |                                              |               |   |                |                    |                                          |
|                                                                           | SAMPLE ANAI              | LYSIS            |                                                                   |                                            |                                                  |                                         |                                       |                                    |                                              |               | ! |                |                    |                                          |
|                                                                           |                          |                  |                                                                   |                                            |                                                  |                                         | 1                                     |                                    |                                              |               | ! |                |                    |                                          |
| Sample No.                                                                | Matrix *                 | Sample Date      | Sample Time                                                       |                                            | 1                                                |                                         | 0.7                                   | <b>49 1</b> 2 3 7                  |                                              |               |   | And the second |                    |                                          |
| J11J28                                                                    | WATER                    | MAR 2 0 20       | DS 1107                                                           | X                                          | · ·                                              |                                         | ļ                                     |                                    |                                              |               |   |                |                    |                                          |
|                                                                           |                          |                  |                                                                   | -                                          |                                                  |                                         |                                       |                                    | -                                            | _             |   |                |                    |                                          |
|                                                                           | <u> </u>                 |                  |                                                                   | <del> </del>                               | <del>                                     </del> |                                         | +                                     |                                    | <b>.</b>                                     |               |   |                | <u> </u>           | <u> </u>                                 |
|                                                                           |                          |                  | <del>-</del>                                                      |                                            | -                                                | <u> </u>                                | <del> </del>                          |                                    |                                              | $\dashv$      |   |                |                    |                                          |
| CHAIN OF POSSESSIO                                                        | <br>N(                   | Sign/Prin        | t Names                                                           | <u> </u>                                   | S                                                | PECIAL INSTI                            | RUCTIO                                | INS                                | <u>.                                    </u> |               |   |                | <u>L</u>           | Matrix *                                 |
| Relinquished lystemayed from                                              | Solo 320                 | ate/Time /2      |                                                                   | 3 44 2=10;<br>() IC Anions - 300           |                                                  |                                         | ride, Nitrati                         | e, Nitri                           | ite, Phosphate                               | , Sulfate)    |   | S=Sediment     |                    |                                          |
| Relinquished By/Removed From 4                                            | Jeff Date/Time 135       | Received By/Stor | ted in Da                                                         | ate/Time                                   | $\dashv$                                         | •                                       |                                       |                                    |                                              |               | · | ·              |                    | SO=Sedickin<br>SO=Sedick<br>St=Studge    |
| > IGACE XIJALI                                                            | FEDE                     | <del></del>      |                                                                   |                                            |                                                  |                                         |                                       |                                    |                                              |               |   |                | W = Water<br>O=Oil |                                          |
| Reliabilished By/Removed From                                             | Date/Time<br>-21.04/0915 | Received By Stor | mith 3.21.0                                                       | હે/જે <b>ય</b> €                           | <u>-                                     </u>    |                                         |                                       |                                    |                                              |               |   |                |                    | A=Air<br>DS=Drum Schds<br>D(=Drum Lugads |
| Relinquished By/Removed From Date/Time Received By/Stoled In Date/Time    |                          |                  |                                                                   |                                            |                                                  |                                         | •                                     |                                    |                                              |               |   |                |                    | Terresus<br>WieWipe<br>1.5 Lapad         |
| Relinquished By/Removed From Date/Time Received By/Stored In              |                          |                  | red In Da                                                         | ate/Time                                   |                                                  |                                         |                                       |                                    |                                              |               |   |                |                    | V=Vegetation<br>V=Oiler                  |
| Relinquished By/Removed From Date/Time Received By/Store                  |                          |                  | red In D                                                          | ate/Time                                   |                                                  |                                         |                                       |                                    |                                              |               |   |                |                    |                                          |
| LABORATORY Received B                                                     | у .                      |                  |                                                                   | T                                          | ític                                             |                                         | -                                     |                                    |                                              |               |   | D              | ate/Time           | 1                                        |
| FINAL SAMPLE Disposal Management DISPOSITION                              | ethod                    |                  |                                                                   | ·                                          | -                                                | Dispo                                   | osed By                               |                                    |                                              |               |   | Ľ              | Date/Time          |                                          |
| DI II EE DAA (ORMONOS)                                                    | <del>,</del>             |                  |                                                                   |                                            |                                                  | ·                                       | · · · · · · · · · · · · · · · · · · · |                                    |                                              | -             |   | •              |                    | <del></del>                              |

## Lionville Laboratory Incorporated SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: THU Hanford

Date: 3.21.06

Purchase Order / Project# / RC-048

LyLI Batch #:

Sample Custodian:

06036563 NOTE: EXPLAIN ALL DISCREPANCIES Carrie Hed Ex 1391 Airbil# 7914 Samples Hand Delivered of Shipped Comments Ø Yes ☐ No Seals Custody seals on coolers or shipping □ No container intact, signed and dated? 3. Outside of coolers or shipping containers are Ø Yes □ No free from damage? All expected paperwork received (coc and ☑ Yes D No other client specific information) sealed in plastic bag and easily accessible? Cooler # 4 FS-04-037 °C Temp 2.3 Samples received cooled or ambient? Z Yes □ No Scals Custody seals on sample containers intact, signed and dated? 7. coc signed and dated? Ø Y⇔ □ No Sample containers are intact? ₽ Ycs □ No All samples on coc received? All samples □ No received on coc? 10. All sample label information matches coc? □ No 11. Samples properly preserved? □ No 12. Samples received within hold times? ☑ Yes □ No Short holds taken to wet lab? 13. VOA, TOC, TOX free of headspace? ☐ Yes □ No GIN/A 14. QC stickers placed on bottles designated by ∕Ú Yes □ No □ N/A client? 15. Shipment meets LvLI Sample Acceptance Ø Yes □ No Policy? (Identify all bottles not within policy. See reverse side for policy) 16. Project Manager contacted concerning □ Yes ₩ No discrepancies? name/date (or samples Discrepancies outside criteria)

